

MCHSANTO

FRCU:	G. A. Crundrann (4-6112)	Corporate Engineering - C360
DATE:	December 23, 1985	CC:_LV. Bumbicka1740*
SUBU:	Project Progress Meeting	<pre>II. A. Coco</pre>
REF:	CLA 3808 - hain South Trunk Sewer	P. R. Hoemann - 1746 L. C. Kreh - F2ED
TO:	J. J. Beckerle - JSA W. Bodine - JSA W. C. Koester - JSA* K. W. Lictenheld - C56G* C. J. Lotz - JSA* R. L. Nelson - 1740* K. W. Petterson - 1740* R. Schlereth - Fleische R. B. Knoll - Fleische	

*Present At Meeting **Present Part Time

Following are minutes of the meeting held at the CED construction trailers on 12/19/85 at 9:30 a.m.

1. Construction Progress

- a. The pile driving to 3-BB is complete.
- b. Manhole 3-AA forms have been stripped.
- c. The 42" VCP base has been poured all the way to 3-AA and eastward through the tunnel.
- c. All the 42° VCP is in the trench from 2-DD to 3-AA and joints are being made.
- e. The cracks are being repaired in the walls on manholes 1-EE and 2-AA.
- f. Manhole 2-BB is full of water. It is hard to maintain the level que to apparent leakage past the plywood closure pieces covering the pipe openings in the walls. The bottom pad is being cleaned off to insure there is no leakage.
- g. Installation of lateral L-44 is in progress to manhole l-DD.

- n. The encasement on the existing pipe inside 1-DD has been reroved.
- The repar has been placed in the trench from 2-CC to 2-DD prior to the concrete encasement pour expected next week.
- Kelly should have track #7 replaced today. Track #3 can then be removed at dept. 245.
- k. The 6" line into 1-JJ from 1-D-1 is complete.

2. Internal hanhole hork

- a. The 1st coat or the asphaltic membrane is being applied to manhole 2-EE.
- b. The south lateral opening to existing manhole 1-D-1 was plugged. Unfortunately, water is still coming in the corner of the manhole. Petterson to patch this area so that the manhole can be gried up. This should allow brickwork to begin the week of 12/23.
- c. Wall work and the lateral L-44 will be complete in manhole l-DD the week of 12/23. Crack repair work is in progress in manhole 1-EE, and both manholes should be ready for membrane work late the week of 12/23.
- d. Work cannot be done on 1-JJ until 1-D-1 is repaired.

3. T-3 Jumper

The jumper is approximately 86% complete. It should be possible to core orill manhole 4-C the week of 12/23. The inside brick repair work must be planned to be done ouring the MCB shutdown.

4. Dept. 245

The current plan here is to dig the trench under the portable bringe and install the bringe without blocking access to the north for dept. 245. After the bringe is installed, the rest of the trench can be excavated between 3-AA and 3-BB. Petterson to work closely with Colling.

5. hiscellaneous

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a. Two used pumps are being shipped to the Krummrich Plant from Pensacola. They will be used to pump overflow water during rainstorms when the T-3 jumper is in use. A search for a proper used motor is also in progress. On-off control and a power supply need to be determined. <u>Petterson</u> and <u>Melson</u> to look for power sources.

- b. The idea was proposed that the main line manholes could be completed and the line turned in prior to completion of some of the lateral manholes. This could avoid some delays since the turn in at 3-BB is critical to work on the remainder or the project, and mannoles are now the critical path item.
- c. <u>licatenhelo</u> reviewed the potential sheet piling requirements down "D" street. The cooling tower appears to be far enough away from mannole 3-ED and the 42" VCP south so as not to require sheet piling. It looks like sheet piling should begin just to the north of the sulphur pit and extend down south past the xylene tanks a distance of approximately 75'. This arrangement would protect the reactor structure, which in reality is a good distance from the future trench.

Alberion furnished a rough estimate for sheet piling from manhole 3-BB to manhole 3-CC. Nelson to get drawings on the sulphur pit.

4. A rough cost estimate indicates that is is not economically feasible to dismantle existing manhole 4-A and build 3-EE in its place. This would add approximately 40° of 42° VCP in addition to dismantling charges.

The next progress meeting will be held on Thursday, January 2 at 9:30 A.M. at the construction trailers. All Monsanto personnel are to neet prior to this meeting at 9:00 A.M.

D.a. Drundwann

/c 2644C

12/19/5-

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tunnel. 2 juints letwer 255-263. The 2-63 under water text 8"the comp 1- II, 8" street disin 1-00 1-00 encasement sources. weils. Janger, we dill manhole next NO. T track replaced tolay I tomorrow. for typing in new Janes. I supposed up

PROJECT VARIANCE

DATE: 12/17/85

AR NO.: 3808 CEA NO: 3808

COMPORATE ENGINEERING DEPARTMENT

VARIANCE NO: 4

Main South Trunk Sewer

PROJECT SCOPE/PREMISES

LOCATION: W. G. Erummrich__

R. L. Nelson

X EXECUTION

J. O. Bright R. J. Geile

- CS6G

M. E. Nolan B. W. Steketee

- 1740

L. C. Kreh J. W. Molloy - F2EC - 1740 - 1740

C. H. Thurman R. L. Wiese

- B2SE

PROJECT SUMMARY

This project will install a new 42° diameter trunk sewer to carry all of the plant sewer load now carried by the two Sauget Village sewers at the south end of the plant.

DESCRIPTION

The following introductory paragraph clarifies the difference between this variance and the previous Variance #3.

Variance #3 addressed the extension to the Mechanical Completion date on this project which resulted in increased administrative costs (engineering and site administration costs) to Monsanto. This variance covers the additional costs that were incurred by the contractor, which were not identified and resolved at the time Variance #3 was issued. The reasons for the additional costs are basically the same for both variances.

This variance increases the Estimated Final Cost (EFC) on this project by \$200k because of costs incurred for the revised vitrified clay pipe joints which were required because the original material specified for the joints is no longer commercially available in the marketplace; for delays to construction execution caused mainly by contaminated soil problems and the need to maintain uninterrupted operation of several Plant Departments; and for additional shoring materials which provided the benefit of increased efficiency in construction execution. These costs were incurred by the contractor and will be added to the Guaranteed Maximum Price (GMP) contract.

D. a. Drundmann 12/17/85

G. A. Grungmann

Date

Project Manager

Director, MIC Engrg.

MONSANTO

FROM:	G. A. Grundmann (4-6112)	Corporate Engineering - CS6G
DATE:	December 13, 1985	CC: L. V. Bumbicka - 1740*
SUBJ:	Project Progress Meeting	M. A. Coco - JSA J. Colling - 1740 R. J. Coile
REF:	CEA 3808 - Main South Trunk Sewer	R. J. Geile - CS6G P. R. Hoemann - 1740 L. C. Kreh - F2ED
TO:	J. J. Beckerle - JSA W. Bodine - JSA	B. W. Steketee - 1740 R. L. Wiese - CS6G
	W. C. Koester - JSA* K. W. Lictenheld - CS6G* C. J. Lotz - JSA*	
	R. L. Nelson - 1740* K. W. Petterson - 1740*	
	R. Schlereth - Fleische R. B. Knoll - Fleische	

*Present At Meeting **Present Part Time

Following are minutes of the meeting held at the CED construction trailers on 12/12/85 at 9:30 a.m.

1. Construction Progress

- a. The driving of piling between 3-AA and 3-BB will be complete today. Also 1 set of piles has been driven south of 3-BB so the manhole can be built.
- b. The walls for manhole 3-AA have been poured and will be stripped today.
- c. Most the of the 42° VCP has been placed in the trench between 2-DD and 3-AA. Also a number of joints have been made.
- d. The 42" VCP run between 2-CC and 2-DD will be ready for hydro test on/2/13/86.

The firewater, which has been unavailable for this test for a few days, should be ready for use at this time.

- e. Manhole 2-AA leaked at one point during testing. <u>Lichtenheld</u> and <u>Nelson</u> to look at the crack and make recommendations.

 Manhole 2-BB should be ready for testing on 2/13 or 2/16.
- f. Alberici feels there may be a leak into the trench between 2-CC and 2-DD during heavy rains that could come from sources other than groundwater.
- g. Lateral L-44 to manhole 1-DD will be installed the week of 12/16/85.

WGK 4084465

n. Cleanup of the sewer area up to manhole 2-AA was requested including the materials on the southeast corner of BB-Z.

2. Internal Manhole Work

- a. Fleischer Seeger is stopped until manholes are ready for them.
- b. Manhole 2-EE should be ready for Fleischer Seeger on 12/16. After that, manhole 1-DD should be ready on 12/23. Manholes 1-EE and 1-JJ should be available shortly after these first two are ready.
- c. The cracks in manhole 1-EE, which seem to be shrinkage cracks, will be reviewed by <u>Lichtenheld</u> and <u>Nelson</u>. One possible repair would be fiberglass and epoxy. The possibility of using an epoxy concrete for crack filling will be reviewed by <u>Lichtenheld</u> and <u>Nelson</u>.
- d. Manhole 1-D-l will be dried up and ready for Fleischer Seeger to begin work on 12/16. The sulfur membrane will not be replaced. An asphalt membrane will be installed prior to installation of the brickwork. Subject to review by Lichtenheld and Nelson, furalac cement will be used to join the new brick to the old brick.

3. T-3 Jumper

- a. Work on the jumper continues. The wet weather has hampered progress. The tie in to existing manhole 4-C can be done in about 1 week.
- b. The brickwork in both manholes was targeted to coincide with department shutdowns. Chlor Alkali will shutdown the week of 12/16. MCB will not have its shutdown in mid-December as originally planned. This timing needs to be reviewed. Petterson and Nelson.
- c. Based on projections of the sewer work to manhole 3-BB, this jumper must be complete by 2/1/86.

4. ACL

The shutdown work at ACL was completed on schedule. A good job was done by all who were involved.

5. Department 245

- a. Piling has been driven to 3-BB as planned.
- b. Work around this department is covered in more detail in paragraph 7 and covers the results of the meeting with department 245 personnel on 12/10/85.

6. Miscellaneous

- a. Drawing work is in progress on the relocation of manhole 2-FF. In addition, the revised location of manhole 3-CC and elimination of 3-DD is being checked and redrawn to insure that this revision is workable.
- b. Work may begin on lateral L-35. Petterson to find an electricity source for heaters. Alberici to review the methods available for keeping the pipe warm during the curing period after the repairs have been completed..
- c. A routing drawing for the electrical power supply to the instrument house was issued for plant review.

7. Work South of 3-BB

a. Alberici is ready to begin excavation from 3-AA to 3-BB the week of 12/16. This is probably possible if the access and storage problems for department 245 can be resolved. Plans were developed and will be reviewed with J. Colling.

Another problem preventing the excavating from beginning is that \$\frac{1}{2}\$ track must be kept open until another through track towards the west end of the plant can be opened. It appears that track \$\frac{1}{2}\$ east of manhole 2-AA can be opened providing Fleischer Seeger can get their work shed over manhole 2-EE without interfering with the rail operation on track \$\frac{1}{2}\$. Petterson and Nelson to check.

- b. Nelson advises that there is probably sand fill between manholes 3-BB and 3-CC. If this is true, the soldier beams and lagging would not be acceptable. Alberici to develop a cost to use sheet piling in this area.
 - c. The location of manhole 3-CC is being reviewed to see if it can be relocated and manhole 3-DD eliminated. <u>Lichtenheld</u>
 - d. The question was raised as to whether the existing manhole 4-A can be dismantled and the new manhole 3-EE built at this location. A rough cost estimate needs to be generated to determine the cost effect. There is additional dismantling changes as well as an additional 40' of 42° VCP. Engineering costs need also to be addressed.

Due to the poor condition of manhole 4-A, it is not considered feasible at this time to run the 42° VCP directly into manhole 4-A and eliminate manhole 3-EE.

e. Since the access arrangements for dept. 245 are more clear at this time, details can be worked out on the storm water overflow pump, which will pump from existing manhole 33-B to existing manhole 2-U. Feld and Crain to be consulted. It will be necessary to avoid conflicts with the sulfur pit, etc.

f. Current thinking is to use the T-3 jumper so that existing manhole 33-A can be flumed. The pipe stub between manhole 3-BB and 33-A will also be installed at this time. Then the T-3 jumper will be temporarily deactivated. This will be done around 2/1/86.

The T-3 jumper will again be put into service when manholes 3-BB and 33-A are ready for brickwork. The jumper will be used to flow from west to east while the brickwork is installed in both these manholes. This will take about 45 days.

At the time the brickwork is being installed in these manholes, work can start on excavation of the trench for the 42" VCP line from manholes 3-BB to 3-CC. The existing 36" sewer line between manholes 3-C and 2-U cannot be crossed until the flow has been turned in at manholes 33-A/3-BB.

The manholes are the critical path item on this project in terms of completing the work for the turn in at 33-A/3-BB. This will occur in the late spring/early summer of 1986.

- g. The step-by-step procedure leading to the final turn on of the sewer at 33-A/3-BB is being developed by <u>Petterson</u>.
- h. It may be possible to build manhole 3-CC and install some 42 VCP pipe between manholes 3-CC and 3-EE. Any work that can be done in this area will be helpful to the job. Petterson and Nelson to review.

The next progress meeting will be held on Thursday, December 19 at 9:30 A.M. at the construction trailers. All Monsanto personnel are to meet prior to this meeting at 9:00 A.M.

G. A. Grundmann

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/c 2644C

MONSANTO

FROM:	G. A. Grundmann (4-6112) Corporate Engineering - CS60
DATE:	December 10, 1985 CC: L. V. Bumbicka - 1740*
SUBJ:	Project Progress Meeting J. Colling - 1740 B. J. Coco - JSA J. Colling - 1740
REF:	R. J. Geile - CS6G CEA 3608 - Main South Trunk P. R. Hoemann - 1740 Sewer L. C. Kreh - F2ED
TO:	B. W. Steketee - 1740 J. J. Beckerle - JSA R. L. Wiese - CS6G W. Bodine - JSA W. C. Koester - JSA* K. W. Lictenheld - CS6G* C. J. Lotz - JSA* R. L. Nelson - 1740* K. W. Petterson - 1740* R. Schlereth - Fleischer Seeger** R. B. Knoll - Fleischer Seeger*

*Present At Meeting **Present Part Time

Following are minutes of the meeting held at the CED construction trailers on 12/5/85 at 9:30 a.m.

1. Construction Progress

- a. Poured a portion of 42" VCP base between 2-DD and 3-AA. Also poured base in 245 tunnel.
- b. Manhole 2-DD walls stripped. Now forming manhole 3-AA walls.
- c. The 42 VCP joints between 2-CC and 2-DD are complete today. A test is planned for next week. The trench has been covered and temperature is being maintained by heaters.
- d. Removed sheet pile at 1-EE. Backfilling is in progress.
- e. Work in progress on finishing the interiors on several manholes.
- f. Plan to fill 2-AA with water today for test.
- g. An additional 72' of trench covers have been made.

Internal Manhole Work

- a. Mannoles 1-AA and 1-GG have passed all final inspections. Mannoles 1-BB and 1-CC have a few more pinholes to fill.
- b. Manhole 1-EE should be complete today and membrane work can start on 12/6/85. 1-EE may be ready next week. The next manholes available will probably be 1-DD and 1-JJ.
- c. Existing manhole l-D-l will be ready for brickwork during the week of 12/9/85. The outside of the manhole is in poor condition. Lichtenheld and Nelson to look at the manhole.
- d. Fleischer Seeger has submitted an extra for additional work. There is an extra pipe in manhole 1-GG that was not on the drawing and which required extra work. In addition, there is a flume passing through the manhole which makes the work more difficult. The additional charges are being reviewed. The flume problem will also be present in manholes 1-DD, 1-JJ, 2-AA, and 2-CC. The flume was the option chosen in lieu of pumping around the manhole, etc.

3. T-3 Jumper

The T-3 jumper is approximately 60% complete. Both manholes will be tied into at the same time for convenience. This will be accomplished most likely during the Chor Alkali shutdown around mid-December.

4. ACL

- a. The shutdown began 12/2. Work could not begin until 12/4. Construction will work weekends, etc. as required to get completed by 12/11.
- b. The 6" cooling tower line is to be VCP material.

5. Department 245

The driving of pile between manholes 3-AA and 3-BB will begin the week of 12/9.

6. Miscellaneous

- a. There are 2 small chips in the spigot face of one piece of pipe that is in the trench. Lichtenheld and Nelson to review.
- b. The supply of water to the showers needs to be checked to insure continuous flow. Nelson
- c. Details on the location of manhole 2-FF are required. Lightenheld
- d. The field routing of the electrical power supply to the instrument house is to be determined and plant approval optained. Petterson and Nelson
- e. There are some cracks inside manholes 1-EE, 2-AA, and 2-BB. Lichtenheld and Nelson to look at and make recommendations.
- f. A small section of a 42° VCP joint between 2-CC and 2-DD has exothermed, probably becaise it was too near a heater. This portion of the joint will be repaired.
- g. Any large identations on the outside of manholes should be filled prior to application of the outside coating. This primarily applies to large indentations caused by bubbles, rock voids, etc.
- h. The dish on manhole floors can be achieved by grinding on in some cases by filling in with the proper cement mixture, such as in the center where the slope drops off too much.
- i. Permits were reviewed to insure that there is clear understanding on the procedures. This was necessary because Carrico retired and new people are obtaining the permits.
- j. It was noted that care should be taken not to place any frozen dirt in the ground as backfill.
- k. Alberici was requested to cleanup materials at the southeast corner of the BBZ storeroom.

7. Work South of 3-BB

The two options for proceeding south of manhole 3-BB were reviewed. Some general conclusions are listed below:

a. When work starts on the membrane/brickwork on manholes 3-BB and 33-A, it will require approximately 45 days to complete. All other work downstream of these manholes must be completed during this time period as the entire sewer from 33-A/3-BB will be turned into service at the time brickwork is complete.

HGK 4084471

b. During the time brickwork is proceeding as outlined in paragraph (a), it should be possible to build manhole 3-CC and also build approximately 80% of the 42 VCP line from 3-BB to 3-CC.

It is not felt at this time that the existing 36" line from 3-C to 2-U can be taken out of service until the manhole 3-BB is turned into service. For this reason, the 42" VCP line cannot be built all the way to manhole 3-CC as it would cross this line.

- c. At this time, it is likely that manhole 3-DD will be eliminated.
- d. While work is proceeding on manholes 3-BB and 33-A, the baffle will be pulled in Box 3-B/3-C to allow this diverted flow to be routed through both manholes 3A and 2-U. There is an outside possibility, but not likely, that all this flow could be diverted thru the 24 line from 3-B to 3-A (baffle not pulled in box 3-B/3-C). Nelson is to furnish flows to Lichtenheld so this can be checked.
- e. Access to the sulphur pit and drum dock at Department 245 during this work is imperative. The drum dock should be accessible from the north between manholes 3-AA and 3-BB. Access to the sulphur pit could be from the north or by pipeline to the south. Nelson and Bumbicka to review with the plant.
- f. When the final portion of the sewer south of manhole 3-BB is ready for operation, a plug must be removed from the 42" pipe. This requires some interface with the safety department to find a way that this operation can be done safely.
- g. The two procedures will now be combined to get a better overall plan.
- h. A review meeting will be set up the week of December 16 with department 245 personel to review the plan. Petterson to set up.

The next progress meeting will be held on Thursday, December 12 at 9:30 A.M. at the construction trailers. All Monsanto personnel are to meet prior to this meeting at 9:00 A.M.

G. A. Grundmann

/c 2644C

HGK 4084472

South Trumb Sine CEA-3808 A. Schelduts (FS) C. Notz PLEERICI W. Houst, ALBERICI I Jundiner H. Hicktorheld B. SteBeter A Getterson Resolve sample line in 33-Birbile 33-A out of Dervice A Helson F3 Flesh Sieges Newds markoles 1-0-1 trough ready to word on. Existing markeling Capplast membrane and buch with furan mortar. 2-EE released today (F3 start on Morday). 1-00 run Betral, grand around encasement, (F3 week from Monday) 1-50 flume through Q-EE 71-0-1-1-51-1-1-1-00-1-EE before we do \$ 1-55. **HGK 4084473** Drive Deling north Plans, one piling south, comp this week ! Formal 3-AA walls. Pipe Q-DD- 3-AA sull winks Q-CC- 2.00 ready total. P Liveman (check on This water usage) can we do test on proposition. I tomorrow or Monday. ACL world proceeding on problem of to Place T-3 jumper, Bung from 33-B. by and

Monsanto

CORPORATE ENGINEERING DEPARTMENT

800 N. Lindbergh Boulevard St. Louis, Missouri 63186 Phone: (314) 884-1000

October 15, 1984

-> lyr plus

J. S. Alberici Company 2150 Kienlein Avenue St. Louis, MO 63121

Attention Mr. C. J. Lotz

REFERENCE CEA 3808, Main South Trunk Sewer - Sauget, IL

Gentlemen

This is to confirm our discussions about acceptance of Vitrified Clay Pipe (YCP) for the above project. During our trip to Dickey Clay Pipe we talked about allowing certain chips and small cracks on the spigots of the pipe. The quality of the VCP was excellent and there were very few pipes unacceptable. Because of this, and due to the fact that some short pieces are required which can be cut from the full lengths and will be acceptable, we intend to require the full intent of the specifications and allow no chips, fractures or cracks in the pipe.

To confirm what was said to the Dickey personnel, we intend that the project specifications be followed. Specifically, that all pipe be hydrostatically tested and that the spigots as well as the sockets be scored. Scoring on the spigot of fired pieces may be done mechanically. Three grooves of 1/8" minimum depth will be acceptable.

Please transmit this information to your supplier. If there are any questions, please contact me.

Kenneth W. Lichtenheld, CS6G

Why are we now willing to comprimise

cc Fred A. Mayse, CS6G **>**R. Nelson, 1740

Masonry / Sheppard

c resins, or gunned ceramic material, type material) with or without a resin

e glass reinforced plastic, rigid d paper or other fibre.

vered by ASTM specification C700 rd and Extra Strength. For normal ngth is usually adequate. Where the sinage or industrial waste, the extra ugh salt-glazed pipe may be used for ould be employed without exception employed primarily in gravity lines, ed for heads of 5' and sometimes 10', se system backing up due to blockage of wastes.

or clay as written, permit absorption of 10 psi, varying from seven minutes ites for 36" to 42" diameters, which running liquid as their definition of ification as written will not provide a ce as specified is usually satisfactory. It the clay from which the pipe are strong caustic, and that pipe of this tes that are expected to run for any 12.

types of wastes, this type of pipe is sanitary wastes "allowable leakages" lons per inch of diameter per mile of figure have been noted to as little as rement that the system be totally wastes at this time a leak-free line is ecifications and test methods shown the higher allowable leakages for poured asphalt joints or hot poured acking" of oiled jute or "oakum," ils as covered in ASTM C-425, a certain types of slip on mechanical

id Proof Joints in Terra Cotta Industrial ier, 1975, vol. 122, No. 12, pp. 64-67.

Chemically Resistant Masonry / Sheppard

closures. A major problem with sanitary sewers is root penetration, since tree roots will seek out and penetrate any leaking joint in order to take advantage of the fertilizing effect of the sewage. Sulfur mortars and some treated joint materials have the advantage of being root resistant. For industrial wastes, hot poured sulfur joints backing a caulked packing of asbestos fibre, used either alone or in conjunction with a resin mortar, is the usual type of joint.

When the allowable leakage is reduced to the lowest figure, or where none at all is permitted, these specifications will not provide an acceptable line. The inadequacy of the absorption and pressure requirements have been pointed out above. In addition, chips and cracks in bells and spigots are permitted within specified limits, as are also some cracks in the barrels. If the pipe line is to be liquid right, there can be no cracks, and certainly both ends must be free of chips and cracks.

A study of out-of-round tolerances and the permissible variances in length of opposite sides of the same section of pipe will make it clear that mechanical and pre-formed joints can never meet a no-leak requirement. Neither can either the Portland cement-sand packing nor the hot poured sulfur joints alone since both shrink to some degree in cure and have measurable absorption, and both will sweat after the joint becomes saturated. Since asphalt has cold flow, any continuous pressure will eventually rupture it, though sanitary lines are more subject to infiltration than exfiltration. A combination of properly selected and tightly installed fibrous packing and resinous mortar, backed and held in place either by hot sulfur or a nearly non-absorbant and non-shrinking material such as in the epoxy resin mortar, is so far the only way to insure a liquid-tight joint. A sketch shows how this may be installed. Should the pipe be broken or should the joint leak under test, it may be sealed by "armoring," that is, wrapping with at least three counter-wound fibre glass cloth bandages, saturated with epoxy resin mortar, each cured separately and held in place until cured with a large "C" clamp. The detailed method of accomplishing this will be found in the appendix.

Clay pipe are brittle and great care should be exercised in the installation if a liquid-tight line is to be obtained. Installation follows ASTM specification C-12. For the handling of industrial wastes and leak-free lines, it is recommended that all pipe be continuously supported by a concrete pad or by saddles, especially if there is any chance of movement of the soil, and that pipe under 12" in diameter, if at all possible, be encased in concrete up to the spring line. Concrete cover or other adequate protection from crushing and vibration must be

South Truck Leves CER 5508 A. Richelo of Colling H. Teleson A. Nelson

Reedt liesur were backfilled completely around manhole 3-BB lefter proceeding south It 3-CC.

Dave area between 200 and 200.

Jedy must approve opining between 3-ARAMP 5-53.

Lutt Trust Live CFA 3808 I Spuncheran W Koests A Tucktor Rales A Illan Fell wide hips applying outside watering. Flischer-Luger- weiting on I-E 1-00, 1-CC mines pen holes need to be filled 2-12 complete today, formely prassion repair 1-0-1 male connection, But in woller, market is deteriorated - Nelson, Thetalles to lot at and decide what if my action is necessary. 2-00, 1-JJ ready for hickwork int base gowed 2-00 to 5-AM and under 0/245 forming walls 3-AA 42" Sip in trend 2-00-9-AA Fige from run 2 quarter sign stripes To be rescured 2-DOW 3-AA test new week. ACL world proceeding. may red OT or - welland word Soldies pile will be driven 3-4963-58. -Fill Z-AA with water. **HGK 4084477**

3303

JUMPER T3 SYSTEM

(Access to Department 245 will Be From the South)

CIVERSION TO EAST

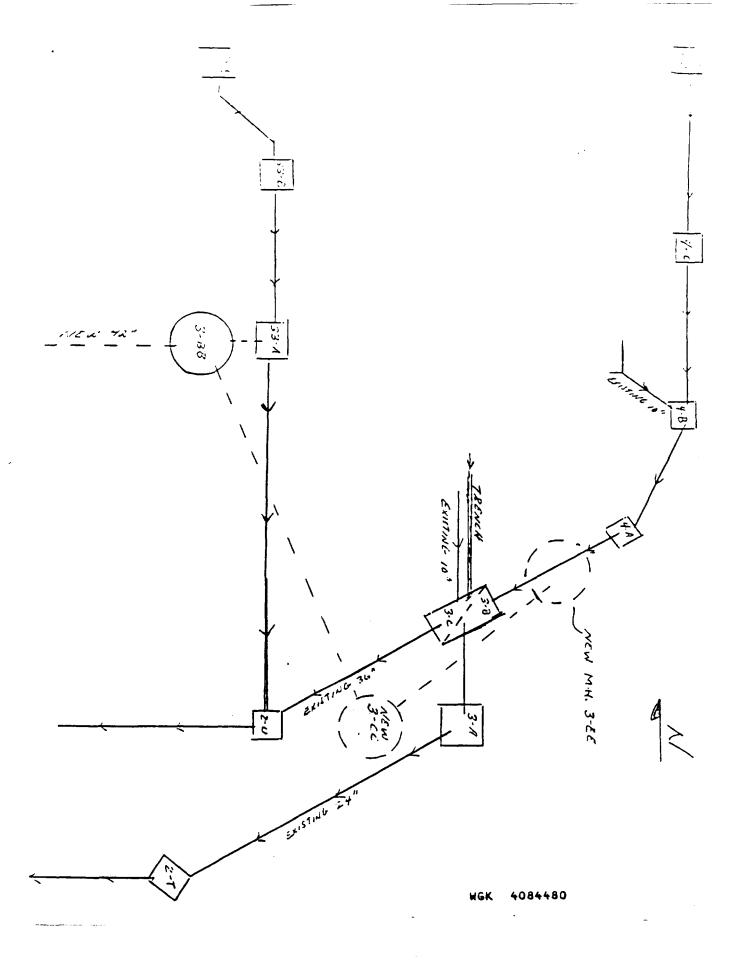
- 1) Plug North line in 33-8 and North line in 2-U with inflatible plugs.
- 2) Build Acid Brick plugs in South line of 33-B and South line of 33-A.
- 3) Remove inflatible plugs after acid brick plugs cure.
- 4) Install pump into Mannole 33-B and discharge into 2-U (For storm use only approximately 275')
- 5) Renovate Manhole 33-A
- 6) Install new pipe into 33-A and stub-out (South line) of 3-BB (Acid brick plug will be installed at the southern most end of stub-out).
- 7) Encase new 42" pipe and test manholes.
- 8) Complete brickwork in M.H.'s 3-BB and 33-A.
- 9) Remove pump from 33-8.
- 10) Install inflatible plug in North line of 33-B.
- 11) Break-out acid brick plug in South line 33-B.
- 12) Turn flow into new system by removing inflatible plug in North line of 33-B.

Ken W. Petterson

NGK 4084478

Diversion to West

- Install inflatible plugs on South line of 4-B and West line of 2-T.
- 2. Build acid brick plugs in West line of 4-A and East line of 2-T.
- 3. Install pump in 4-C and discharge into 33-B (Storm Use only)
- 4. When acid brick plugs cure, pull inflatible plugs
- 5. Install pump into M.H. 3-C and install inflatible plug in outlet. Discharge to 4-B (will have constant flow)
- 6. Install acid brick plug in outlet of 2-U.
- 7. Break-out existing 36" V.C.P. between 33-A and 3-C.
- 8. Complete new 42" V.C.P. between 3-BB and 3-EE. (New location of 3-CC to be determined)
- 9. Install inflatible plugs in 33-B outlet and 33-A inlet, Also in North and East lines into 3-CC and outlet of 3-BB.
- 10. Install pump into 33-B and discharge into 3-AA.
- 11. Break-out acid brick plug from stub-out at M.H. 3-BB and brick plug in 2-U outlet.
- Install inflatible plug in M.H. 4-B outlet and break-out acid plug in M.H. 4-A.
- 13. Remove inflatible plugs in M.H. 3-CC.
- 14. Remove inflatible plug from 4-B, 3-BB, 33-A and 33-B.
- 15. Build acid brick plug in outlet of 3-C, remove inflatible plug
- 16. Remove pump from 33-B and 3-C.



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- is angles, remp in the route discharge to but
- 2. Instail in-locable props on outlet of TD-B and month of D-G
- 3. Install being place in inlet and butlet of 33-A
- Break into existing 36" line doubt of 42" crossing and listall elbow and liser for pump discharge
- Abon curing of acid brick plugs and pipe joints on riser remove inflatible plugs from T3-B and 2-U
- a. Approate pump discharge to new riser in 36" line
- 7. Rework 33-A and install 42" tie-in to 3-BB
- Remove existing 36" line South of 33-A to facilitate construction of 42" line from 3-BB to 3-CC
- 9. Divert flows from Dept 255 from 3-C to 4-8
- 10. Install concrete brick plug in 36" outlet of 3-C and inflatible plug in East inlet of 2-U
- 11. Remove existing 36" line between 3-C and 2-U, install acid brick in 36" just East of 2-U
- 12. Install 3-CC, 36" line to 2-U and 42" stub towards 3-DD at this point in time the brickwork in all manholes to and including 3-BB must be completed for construction to continue uninterrupted
 - * CED to provide study of 24" systems capacitty
 Flant will be subjected to greater risk due to the
 duration of construction for line to 3-00 and M.H. 3-00

Diversion to West

WGK 4084481

Install inflatible plug in outlet or 33-B

Remove acid brickk plug in inlet of 33-A

Install inflatible plugs in line from 3-BB to 3-CC at N.H.'s

Remove inflatible plug in outlet of 33-B - Flow now turned into $42^{\prime\prime\prime}$

Move pump to 4-B and pipe discharge to riser in existing $\mathbb{Z}6"$

_Install inflatible pluos in inlet at 2-T and outlet at

287480⁴

do bedind wolf

U V

A-A JE BUIG Abind avomen bas 4-4 faithouts puly sidiffini [Leten] BOT PUR STO

mont alangtal ni-air 20-5 bna BB-5 mont apulg aldizelthi boom sompletion of brickwork and curing remove

neewled senil "It bns BE-1 ,00-5 (laisni

guiq alorisitari avoman guiq to princa noca Jaini Jaka Ja

Femove Italiant une T-2 to Jack Bart "AC overage B-b or butd

elditalini avoman A-4 ta puig stida bida to primus noqu H-F 18 1911 OF COLUMN WILLS OF STREET

- i. Install pump in line route discharge by 28
- install inflictuals proce on amount of TB-B and morth of t-0
- . Institution.in police in intet and subjet of WS-A
- 4. Ereak into existing Ta" line South of 42" procesing and install elbow and timen for pump discharge
- Open Curing of acid brick pluds and cipe joints on riser temove inflatible plugs from DG-B and 2-U
- C. Perbute pump discharge to new riser in 36" line
- 7. Rework 30-A and install 42" tre-in to 3-BB
- Remove existing 35" line South of 33-A to facilitate construction of 42" line from 3-BB to 3-CC
- 9. Divert flows from Dept 255 from 3-C to 4-B
- 10. Install concrete brick plug in 36" butlet of 3-C and inflatible plug in East inlet of 2-U
- 11. Remove existing 36" line between 3-C and 2-U, install acid brick in 36" just East of 2-U
- 12. Install 3-CC, 36" line to 2-U and 42" stub towards 3-DD at this point in time the brickwork in all manholes to and including 3-BB must be completed for construction to continue uninterrupted

WGK 4084483

* CED to provide study of 24" systems capacitty
Flant will be subjected to greater risk due to the
duration of construction for line to 3-CD and M.H. 3-CD

Diversion to West

Install inflatible plug in outlet or 33-8

Remove acid brickk plug in inlet of 33-A

Install inflatible plugs in line from 3-B8 to 3-CC at M.H.'s

Remove inflatible plug in outlet of 33-B - Flow now turned into $42^{\prime\prime}$

Move pump to 4-B and pipe discharge to riser in existing \mathbb{R}^6

Install inflatible plugs in inlet at 2-T and outlet at

lescal) said brize prop in cutiet at 4-A

upon curity of acid brick plug at 4-A remove inflatible plug at 4-A

Senowe 13% line East of 12-T and install acid brick blug at East inlat

upon curing of plug remove inflatible plug

Install 3:00, 3-EE and 42" lines between

dpon completion of brickwork and curing remove inflatible plugs from 3-BB and 3-CC tie-in laterals -rom 245 and 355

Install inflatible plug at outlet 4-8 and remove brick plug at $^{4}\text{-A}$

Flow turned on

HGK 4084484

- Install pump in 32-8 route discharge to 20
- Install an-latable plugs in ourset of 33-B and Worth of 2-U
- Insta: original places in linest and outset of 33-n
- 4. Break into existing 35" line South of 42" crossing and install elbow and riser for pump discharge
- Apon curing of acid brick plugs and pipe joints on riser remove inflatible plugs from 33-B and 2-B
- 5. Remoute pump discharge to new riser in 35" line
- 7. Rework 33-A and install 42" tie-in to 3-BB
- 3. Remove existing 36" line South of 33-A to facilitate construction of 42" line from 3-BB to 3-CC
- 9. Divert flows from Dept 255 from 3-C to 4-B
- 10. Install concrete brick plug in 36" outlet of 3-C and inflatible plug in East inlet of 2-U
- 11. Remove existing 36" line between 3-C and 2-U, install acid brick in 36" just East of 2-U
- 12. Install 3-CC, 36" line to 2-U and 42" stub towards 3-DD at this point in time the brickwork in all manholes to and including 3-BB must be completed for construction to continue uninterrupted
 - CED to provide study of 24" systems capacitty
 Plant will be subjected to greater risk due to the
 duration of construction for line to 3-CC and M.H. 3-CC

Diversion to West

HCK 4084485

Install inflatible plug in outlet or 33-B

Ramove acid brickk plug in inlet of 33-A

Install inflatible plugs in line from 3-BB to 3-CC at N.H.'s $\,$

Remove inflatible plug in outlet of 33-B - Flow now turned into 42"

Move pump to 4-B and pipe discnarge to riser in existing 36m

Install inflatible nluns_in inlet at 2-T and outlet at

Install azid brick blug in outlet at 4-Ass

upon curing of acid brick plug at 4-A remove inflatible plug at 4-B

Remote 24" line East of 2-T and install acid brick plug at East inlet

boon curing of plug remove inflatible plug

Install 3-DD, 3-EE and 42" lines between

Upon completion of brickwork and curing remove inflatible plugs from 3-BB and 3-CC tie-in laterals from 245 and 255

Install inflatible plug at outlet 4-B and remove brick plug at 4-A $\,$

Flow turned on

UCK - 4084486

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MONSANTO

FROM:	G. A. Grundmann (4-6112) (Corporate Engineering - CS6G
DATE:	November 21, 1985	CC: D. R. Bowers - CS6G L. V. Bumbicka1740**
SUBJ:	Project Progress Meeting	R. M. Calles CS6G
		M. A. Coco - JSA
REF:	CEA 3808 - Main South Trunk	J. Colling - 1740
	Sewer	R. J. Geile - CS6G
		E. R. Hartman - CS6G
•		P. R. Hoemann - 1740
TO:	J. J. Beckerle - JSA	L. C. Kreh - F2ED
	W. Bodine - JSA	F. A. Mayse - CS6G*
	T. N. Carrico - 1740*	B. W. Steketee - 1740*
	W. C. Koester - JSA*	R. L. Wiese - CS6G
	K. W. Lictenheld - CS6G*	
	C. J. Lotz - JSA*	
	R. L. Nelson - 1740*	
	K. W. Petterson - 1740*	
	R. C. Martini - 1740	
	R. Schlereth - Fleischer	r Seeger*
	R. B. Knoll - Fleischer	

*Present At Meeting
**Present Part Time

Following are minutes of the meeting held at the CED construction trailers on 11/21/85 at 9:30 a.m.

1. Construction Progress

- a. Excavation has been completed from 2-DD to 3-AA. The subgrade and base will be poured tomorrow.
- b. Manhole 1-EE passed the water test.
- c. Manholes 2-AA and 2-BB should be released for water testing next week.
- d. Lateral L-64 has been completed.
- e. Manhole 2-DD walls to be poured today.
- f. Plan to pour manhole 3-AA base 11/25.
- g. Manhole 1-EE and 2-EE will be dried out and heated preparatory to installation of the exterior coating. The sheet piling needs to then be pulled for manhole 1-EE. Both manholes will be backfilled around the outside as soon as the coatings are complete.

h. Continued rain has hampered progress. In particular the rain has prevented the making of joints between 2-CC and 2-DD. There may be an underground pipe leak between 2-CC and 2-DD that shows up during the heavy rains.

2. Internal Manhole Work

- a. Manhole 1-GG The brickwork is complete. Inspection has been made and minor repairs are in progress.
- b. Manholes 1-AA, 1-BB, and 1-CC are all in the final stages of inspection and repair.
- c. Manholes 1-EE and 2-EE will be coated on the outside on Saturday, weather permitting.
- d. It will be possible to do the brickwork on existing manhole l-D-l on approximately 12/9, if this is convenient.
- e. Knoll suggested using Tufchem, an epoxy grout, on the inside of manhole 1-D-1, instead of concrete. <u>Lichtenheld</u> and <u>Nelson</u> to review.

3. T-3 Jumper

- a. Progress on the T-3 jumper has been hampered by rain. With so much rain, it was emphasized that the shoring needed to be high enough to insure there would not be a cave-in.
- b. Tieing into manhole 33-B will not be done until around mid-December when the nearby departments are shutdown.

4. ACL

- a. All preparations for the 12/2 shutdown are in good shape.
- b. The precast sections to be used between manholes 1-JJ and 1-D-1 were tested. One passed and one failed. The failed section will be repaired and retested.
- c. Information on the 6° line from the cooling tower has been given to construction. Work can be done on this line prior to the shutdown.

HGK 4084489

5. Department 245

- a. Details have been drawn up for the mat to be placed across the trench north of 245.
- b. Alberici can drive piling from 3-AA to 3-BB. The piling must be flush with the ground. This work would probably start in early December. Petterson to work it Judy Colling to insure that the timing is satisfactory.

6. Miscellaneous

- a. Alberici has had some difficulty with housekeeping in several areas due to the heavy rains. These areas will be cleaned up in the near future.
- b. Alberici requested a small area for approximately a week to place and cleanup piling before loading it onto a truck.

 Nelson to check that the designated area is OK.
- c. Trial fitting of the flume will be made when the manhole 1-AA brickwork passes inspection.
- d. Crain advised that he is issuing electrical supply information drawings for power to the instrument building.
- e. Alberici will work the day after Thanksgiving.
- f. Two options for moving south of manhole 3-BB are being typed up for review with <u>Alberici</u> during the next meeting.
- g. Good luck and thanks to all the retirees who have put a lot of hard work in this project.

The next progress meeting will be held on Thursday, December 5 at 9:30 a.m. at the construction trailers. All Monsanto personnel are to meet prior to this meeting at 9:00 a.m.

G. A. Grundmann

/c 2644C

11/22/85

R. Patherson B. Staketee

bagin in Jan. BG. The plant is planning to dismantly storage tonk # V-222 in the South ACL courtyard. This work is scheduled to

Presently there is an electrical feeder cable, used to provide power for the dematering wells and ISA's power carts, supported from this tenk. It appears this cable is no longer being utilized by the sawer project

project (CEA3808) should begin work to renaise abla if it is no longer being utilized or relocate is he cable is still being utilized. This work must be slated by Jan 1, 1986. relocate it

R.L. Nelson

JCK +08++91

Monsanto

INAME - LOCATION - PHONE: T. Carrico - WGK. Extension 2095 November 18, 1985 cc. L. Bumbicka K. Lichtenheld - CS6G Status Report on CEA 3808 R. Martini R. Nelson K. Petterson REFERENCE B. Steketee P. Hoemann TO

No change on L-34 and L-35.

Manhole 1-BB has not been repaired for reinspection.

Manhole 1-CC has been accepted by the plant.

Manhole 1-GG brick work on walls approximately 80% complete.

Manhole 1-EE will be retested at plant request.

Manhole 2-DD being formed for pour.

No joints have been started between 2-CC and 2-DD because of the rain trench heated.

Excavation just about to 3-AA.

T-3 progress about the same - some cover and compaction.

Again rainy weather hampered real progress most of the week.

Januaries
T. Carrico
Operations Foreman

skg

HGK 4084492

IN-1120

MONSANTO munomann (4-6112) Corporate Engineerin FROM: 15, 1985 Novemb CC: D. R. Bowers L. V. Bumbicka -DATE: Project Progress Meeting R. M. Calles M. A. Coco - JSA SUB CEA 3808 - Hain South Trunk J. Colling -1740Sever R. J. Geile - CS6G E. R. Hartman - CS6G P. R. Hoemann -1740J. J. Becker J. - JSA* W. Bodine - JSA L. C. Kreh - F2ED - JSA F. A. Mayse - CS6G T. N. Carrico - 1740* - JSA* B. W. Steketee - 1740* W. C. Koester R. L. Wiese - CS6G . C. Koeste.
. W. Lictenheld - CS6G*
T Lotz - JSA* L. Nelson - 1740* W. Petterson - 1740* Martini Mehlereth - 1740* - Fleischer Seeger* - Fleischer Seeger*

*Present At Meeting

Following are minutes of the meeting held at the CED construction trailers on 11/14/85 at \$2.30 a.m.

1. Construction Pro

- a. Excavation finding north of manhole 2-DD towards 3-AA. As expected, and has been encountered and is being removed. Also phose is is being turned up. It is being spread out so it will term off.
- b. Manhole base poured. The walls are being formed for a pour next week.
- c. 42" VCP is being installed east of 2-CC. The trench is covered and heaters are in place.
- d. Manhole poured the water test. 1-EE is still being tested.
- e. The lateral L-64 15° joint passed the hydro.

-40

- f. The L-44 lateral south of manhole 1-DD will be tied in next week.
- g. The continued tain has slowed construction progress.

MGK 4084493

2. Internal Manhole Work

- a. Manhole 1-GG Brickwork one-half way up walls.
- b. Manholes 1-AA, 1-BB, and 1-CC all need a final inspection. The flume in 1-AA has final approval.
- c. <u>Schlereth</u> advised that 40 to 45 days to complete a manhole is a reasonable time for scheduling purposes.
- d. Delays in getting manholes to Fleischer Seeger for brickwork is a major concern. The manholes are now on the critical path. Fleischer Seeger will be out of work Monday (11/18).
- e. Manhole 2-EE should be available for membrane work the week of 11/18.
- f. Briefly reviewed requirements for applying coating to outside of manholes.

3. T-3 Jumper

- a. Work continues on installation of the 21° pipe on this jumper. Rainy weather is delaying progress.
- b. Tieing into existing manhole 33-B may be more difficult than planned because the manhole usually runs very hot. Nelson to review with the various departments for timing. It will probably be the week of 11/18 or a number of weeks later when shutdowns can be coordinated.

4. ACL

- a. The shutdown still is scheduled for 12/2.
- b. The 2 sections of pipe to go between manholes 1-JJ and 1-D-1 will be retested 11/15.
- c. Chipping in 1-D-1 will start about 11/20 after the 8* bypass pump and flume have been installed.
- d. Detailed information is needed on the 6° line from the cooling tower. Nelson and Lictenheld.
- e. No work can be done in manhole 1-DD prior to the shutdown.

HEK 4084494

5. Department 245

Petterson should have some detailed information by 11/18 on the mats to be used for crossing the trenches near this department.

6. Miscellaneous

- a. Invert information given to <u>Alberici</u> by <u>Lichtenheld</u> for the lateral from manhole 2-FF. Followup drawings to be made.
- b. Crain has assembled information for electrical power supply to instrument house. Sketches are about complete and will be forwarded to construction and the plant for review.
- c. VCP should be used on the pipe exposed south of 2-EE.

The next progress meeting will be held on Thursday, November 21 at 9:30 a.m. at the construction trailers. All Monsanto personnel are to meet prior to this meeting at 9:00 a.m.

Gordon

G. A. Grundmann

/c 2644C

FROM NAME - LO	NAME-LOCATION-PHONE T. Carrico - WGK, Extension 2095					
GATE		November 12, 1985	ŤL.	Bumbicka 🐔		
		•	K.	Lichtenheld - CS6G		
SUB-ECT		Status Report on CEA 3808	R.	Martini		
		•	R.	Nelson		
PEFERENCE	: :		K.	Petterson		
			В.	Steketee		
TO	:	P. Hoemann				

No change on L-34 and L-35.

Manhole 1-BB inspected - not acceptable.

Manhole 1-CC inspected - not acceptable.

Manhole 1-GG brick work on sidewalls.

Manhole 1-EE still being tested.

Manhole 2-EE okayed for priming.

Base slab between 2-CC and 2-DD extended to just short of 2-DD - VCP being heated for joint bonding.

Base for 2-DD poured and excavation north to 3-AA around 35% complete.

T-3 is in from 33B to just east of city water main to #16 cooling tower.

T. Carrico

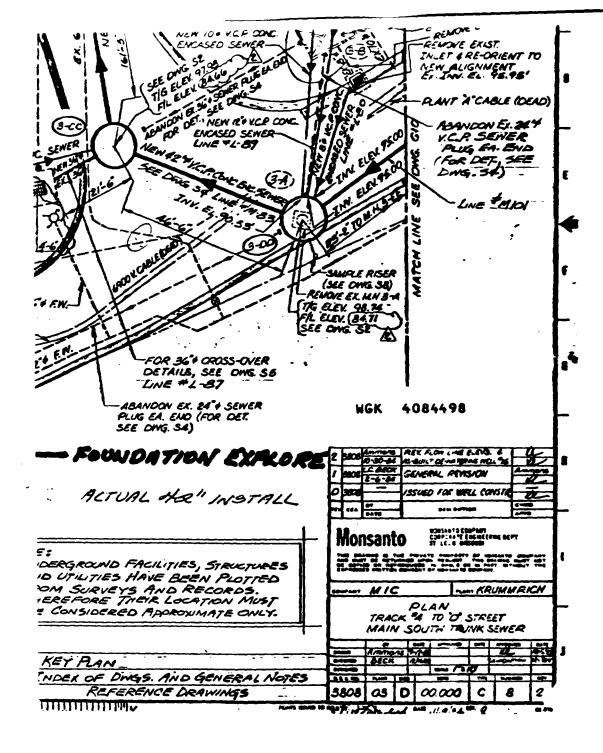
Operations Foreman

skg

WGK 4084496

iN-1120

CER 3868 Lutts Trunk Source Le cuis manholes are consint properly 1-EE glant position in the no-les Ten to check to " sign alignment. TroBat markolo dis inis for jumpa T.3. A Becker - FLOWLINE 1-66 Price is Parfling up the wall. Monday buckland out of we B. 2-EE/(1-EE? Jready. Fring (in winter) 10% Affithe moister metal). 1-00 Julifuster. Rud to condinate inspection of manholes. Supper 1-CC. 9:00AM 1/545 Exercise 3-4A. Forming 2-00 Precast test 1-55. 1:00 M this afternoon. Refil 1-EE. Padto resolve 6" from ACL cooling tower. (only thing for ACL). The



FROM

(MAME-LOCATION-PHONE) A.J. Ouick - WCK - 2271

DATE

November 8, 1985

L. Bumbicka

W. Smull

SUBJECT

LAIDLAW PERMIT STATUS

REFERENCE

S. Trunk Sewer Project

TO :

R. Nelson

Bill Smith of the Chicago office of Laidlaw notified me on November 8, 1985, that they had submitted to IEPA requests to become permitted to landfill Excavation Dirt A(contaminated with unknown oil) and B(contaminated with 2NBP). Laidlaw decided not to accept Dirt C(contaminated with tar components) into their landfill, so they will not pursue a landfill permit. I expect IEPA will approve the landfill permits for Dirt A and B sometime in November or early December.

I'll notify you as soon as I become knowledgeable.

A.S. Ouick

AJQ/m

MONSANTO

From:	G.A. Grundmann	CS6G	Corr	porate Engineering	(4-6112)
Date:	November 8, 1985		cc:	D.R. Bowers	CS6G 1740*
Subj:	Project Progress	Meetings		L.V. Bumbicka R.M. Calles M.A. Coco	CS6G Alberici
Re:	CEA 3808 - Main S	outh Trunk	Sewer	J. Colling R.J. Geile E.R. Hartman	1740 CS6G CS6G
TO:	J.J. Beckerle W. Bodine T.N. Carrico W.C. Koester	Alberici* Alberici 1740 Alberici*		P.R. Hoemann L.C. Kreh F.A. Mayse B.W. Steketee	1740 F2ED CS6G 1740**
	K.W. Lichtenheld C.J. Lotz R.L. Nelson K.W. Petterson R.C. Martini R. Schlereth R.B. Knoll		Seeger*	R.L. Wiese *Present at meeting **Part-time	CS6G

Following are minutes of the meeting held at the CED construction trailers on 11/7/85 at 9:30 a.m.

1. Construction Progress

- a. Continued excavation from 2-CC to 2-DD and from 2-DD to 3-AA.
- b. Manhole 1-EE leaked again. Repair in progress prior to testing again.
- c. Water testing of manhole 2-EE in progress.
- d. The one joint in the 15st lateral L-64 leaked on retest. Repairs are in progress.
- e. Both precast sections that will tie into manhole 1-JJ leaked. Repairs in progress.
- f. Stub out work completed on manholes 1-AA (1) and 2-BB (2). Stubs encased. The exposed rebar will be protected and backfilling will be done.
- g. The last 70° of the 42° pipe base west of 2-DD has been poured. Will pour manhole 2-DD base today.
- h. By the end of 11/8, all of the 42° VCP will be placed in the trench between 2-CC and 2-DD. Heaters and covers will now be used for joint work in this area.
- Work progressing on finishing MH 1-DD. Should be complete by 11/8.

WEK 4084500

J.J. Beckerle, et al November 7, 1985 Page 2

j. Hauling the rubble west of dept. 245 off the site today.

2. Internal Manhole Work

- a. Manhole 1-BB. Final inspection today by <u>Petterson</u> and Lichtenheld.
- b. Manhole 1-CC complete. Final inspection today.
- c. Manhole 1-GG. Starting brickwork on side walls.
- d. Schlereth to check records for time to complete manways.

 Current time in schedule is 40 days. Manhole 1-BB apparently took longer (52 days per Koester). We need this timing to see how it imparts the schedule. Future manholes may be more difficult to brick because of the increased number of openings.
- e. Manhole 2-EE should be ready for Fleischer Seeger on 11/12/85. Manhole 1-EE should test next week. Manholes 2-AA and 2-BB are being readied for testing.
- f. Schlereth to make final inspection of manholes before requesting a Monsanto inspection.

3. T-3 Jumper

- a. Work is in progress. Ready to start laying pipe up 4th Street.
- b. Heaters and blankets will be used for curing the joints. Petterson to locate power source.
- c. Some of the excavated material is full of bricks, rocks, etc. This material to be hauled to stockpile area and dirt from pile 3 used for backfill. <u>Petterson</u>. Material should be compacted where possible.

4. ACL

- a. The invert of manhole 1-D-1 necessitates some chipping of concrete. This work will be done ahead of the 12/2 shutdown. Petterson.
- b. Both tracks have to be removed since the 6" line from the cooling tower needs to be tied into manhole 1-D-1. Details to be furnished by <u>Lichtenheld</u> and <u>Nelson</u>.

MGK 4084501

J.J. Beckerle, et al November 7, 1985 Page 3

Dept. 245

Details need to be furnished to Alberici for the mats that will be placed across the trenches from 2-DD to 3-AA and 3-AA to 3-BB. Petterson and Nelson to discuss with Jody Colling.

6. Miscellaneous

- a. Manhole 2-FF will terminate at 2-DD. Invert to be given to Alberici so 2-DD walls can include this line. Drawings of revised line being made. <u>Lichtenheld</u>.
- b. Alberici is not working 11/11.
- c. All of the area around manhole 2-EE can be backfilled upon completion of the water test and outside coating. This includes the stub pipe on the north.
- d. The flume will be dropped into manhole 1-AA to check the fit. Both ends probably need to be trimmed. Petterson.
- e. <u>Alberici</u> reminded to cover the manholes carefully during the water test so that added rainwater and/or excessive evaporation do not distort the test.
- f. Lotz to check pipe in trench east of 2-CC for the best fit.
- g. Work on manhole 1-DD is nearing completion. There is agreement on the guideline ACI spec.
- h. Procedure south of 1-BB issued for comments. It will be updated and reviewed with <u>Alberici</u> for their comments at that time.

The next progress meeting will be held on Thursday, November 14 at 9:30 a.m. at the construction trailers. All Monsanto personnel are to meet prior to this meeting at 9 a.m.

Gordon Grundmann

21782

WEK 4084502

Surli Tourle Sewer 3808

J. Sundinan

J. Tuchterhold

P. Martin

P. Morit (Fleavier Lugar)

C. Story (Allevier)

W. Schlereth (Fleacher Lugar)

J. Beckerle (Allevier).

P. Melcon.

1-66 mends complet inspection
Plankoliverle has stopped.
1-CC ready to inspect. (Inspect 1.30pm TODRY).
Rich to powde a time for markele start to
completion of Flescher-Seign work.
Excar east of 2CC, ready to start to 3AA.
Retest 15 Deved a lead.
Litely work complete AAA and 2007
Future tie-ins 2-AA and 2007
T-3 laypipe east on HAV start. (2 weeks).
1-0-1 work to legen (grewnle) legen
ACL shutelown.

NAME-LOCATION-PHONE: T. Carrico - WGK, Extension 2095

DATE

November 4, 1985

1031601

REFERENCE

Status Report on CEA 3808

-- cc.L. Bumbicka

K. Lichtenheld - CS6G

R. Martini

R. Nelson K. Petterson

B. Steketee

TO

P. Hoemann

No change on L-34 and L-35.

Manhole I-BB ready for inspection.

Manhole 1-CC about 5 rows of wall brick to finish.

Manhole 1-GG brick work in bottom started.

Manhole 1-EE still looking for a reliable test.

Base for 15 inch stub and first section out of 2-AA on L-63 was encased.

Stub out and L-66 section encased at 2-BB.

Around 70% of base slab poured between 2-CC and 2-DD.

Very little real progress made on T-3.

Rain hampered most of week's work.

T. Carrico

Operations Foreman

skg

MONSANTO

From:	G.A. Grundmann	CS6G	Cor	porate	Engineering	(4-6112)
Date:	October 31, 1985		cc:	D.R. B	owers	CS6G
	·			L.V. B	umbicka	1740*
Subj:	Project Progress	Meetings		R.M. C	alles	CS6G
•					000	Alberici
				J. C	olling	174C
Re:	CEA 3808 - Main S	South Trunk	Sewer	R.J. G	•	CS6G
				E.R. H	artman	CS6G
TO:	J.J. Beckerle	Alberici*		P.R. H	oemann	1740
	W. Bodine	Alberici		L.C. K	ren	F2ED
	T.N. Carrico	1740*		F.A. M	ayse	CS6G
	W.C. Koester	Alberici*			teketee	1740*
	K.W. Lichtenheld			R.L. W	iese	CS6G
	C.J. Lotz	Alberici*				
	R.L. Nelson	1740*		*Prese	nt at meeting	
	K.W. Petterson	1740*			_	
	R.C. Martini	1740*				
	O.N. Shipley	1740				
	R. Schlereth	Fleischer	Seeger			
•	R.B. Knoll	Fleischer				

Following are minutes of the meeting held at the CED construction trailers on 10/31/85 at 9:30 a.m.

1. Construction Progress

- a. Excavation continues from 2-CC to 2-DD.
- b. Backfilling in progress between 2-AA to 2-BB, 2-BB to 2-CC and 2-AA to 2-EE. Piling and lagging is being removed in these areas.
- c. Manhole 1-EE is being refilled for testing. Manhole 2-EE is being prepared for water test also.
- d. Work continues on manholes 2-AA and 2-BB for excavating, installing, and encasing the stubs and laterals.
- e. The leak in the 15" lateral L-64 has again been repaired preparatory to testing.
- f. A portion of the 42° base has been poured from 2-CC to 2-DD. Pipe will be installed in the trench on 11/1.

2. Internal Manhole Work

- a. Manhole 1-BB cleaned up and ready for final inspection.
- b. Manhole 1-CC. Brickwork is halfway up the wall.
- c. Manhole 1-GG. Brickwork has started on the floor.

NGK 4084505

J.J. Beckerle, et al October 31, 1985 Page 2

> d. Manholes 1-EE and 2-EE will next be available for membranes and brickwork. 1-EE may be ready by the end of next week. Fleischer Seeger will soon be out of work, and due to the cure time required on the membranes, the acid brickwork will soon be on hold.

3. Jumper T-3

- a. Work is in progress on the T-3 jumper.
- b. The jumper had to be installed under an existing fire main.
- c. Surplus pumps capable of pumping 7500 gpm have been located. They would be used to handle any overflow from a heavy rainstorm. The details need to be worked out.

4. Dept. 245

The asphalt path for fork trucks has been laid north of dept. 245. This allows excavation to begin between manholes 2-DD and 3-AA.

5. VCP Joints

The procedure for repairing lateral L-35 has been given to Alberici.

6. Miscellaneous.

- a. Crain writing up electrical power supply data for sample house.
- b. The rubble west of dept. 245 has been washed and will be sent to the landfill when it is dry.

Washing of the rubble in the stockpile area is also in progress.

- c. Inspections made at manhole 1-DD and repairs are in progress.
- d. A CFO has been written to cover any additional state taxes owed.
- e. Work continues in the 2-FF relocation. Lichtenheld.
- f. Elevation of the existing manhole 1-D-1 will cause flow problems to 1-JJ. <u>Lichtenheld</u> to review options so plans can be made for shutdown. The 6° line from the cooling tower needs to be checked.

J.J. Beckerle, et al October 31, 1985 Page 3

> g. Repairs on manhole 1-EE discussed. Manhole to be retested on 11/1/85.

The next progress meeting will be held on Thursday, November 7 at 9:30 a.m. at the construction trailers. All Monsanto personnel are

to meet prior to this meeting at 9 a.m.

Gordon Grundmann

2178Z

Luth Jours Liver CEP 3308 J Gendren A Sectobelle P Martins E The COLERA EJE : OLEANCE A Settino W Houte ALBERICE. R Helen That Flecher Luge! J. Bickuley - FLBERKI Recold 6" From ACL cooling Lower 1-0-1 Ange in lis-in Solvention to new manhole on sast side But to resolve 18" flow east of took 60 Alacker-leger perde more montres.

ALBERICE MANIGHT.

a) 1-EE felling today again to netect. Entire of.

2-EE level top lateral and water ties. b) A-BA stul work finishing this week test tomorsow 2-BB placing 10" stule and SH" stule. 2-CC encase its " and test 1-83 ready to import. Review Ald weather procedures for hickory. Continued excavation 2-AA to S-BB backfill Continued.

Fire mois miss

ALV line how is 42" being gut in

6" from ACL evoling Towns

WEK 4084508

JULY- DEC 1985

.... A084509

October 28, 1985

Date October 28, 1985

L. Bumbicka
K. Lichtenheld - CS6G
R. Martini
R. Nelson
K. Petterson
B. Steketee

TO: P. Hoemann

No change on L-34 and L-35.

Manhole 1-BB still needs to be cleaned up for inspection.

Manhole 1-CC work continues on walls.

Manhole 1-GG ready for brick work.

Manhole 1-EE still being retested.

Work started on L-63 between 2AA and 2B.

Flume work and temporarily repairs completed at 2CC and 2F - flow was diverted through these lines Friday and the 18" east of track 6 was removed Saturday.

Excavation between 2CC and 2DD around 80% complete.

Soldier beams driven from 2-DD to 3-AA.

Sewer box 33B core drilled and T-3 jumper started north of #16 cooling tower.

T. Carrico Operations Foreman

skg

HGK 4084510

15 1120

Monsanto Company Corporate Engineering Department Sauget, Illinois 62201

October 24, 1985

J.S. Alberici Construction Co.

C.J. Lotz

Subject: CEA 3808 South Trunk Sewer Construction Field Orders

Please be advised that the following Construction Field Orders will be closed and no further charges will be accepted:

#2-4	Manhole 1-CC Addition.
2-5	Tunnel Installation at ACL Tracks
2-6	Sales Tax Reduction
2-9	Relocate Bldg. BBZ Loading Dock

2-11 Clean out RR Road Crossing Plates

2-12 Install RR Car Stops on Tracks \$8B and 8D
 2-13 Deletion of Hauling Material to Granite City Landfill

2-15 Deletion of Sand Backfill

2-21 Deletion of 9" Stone Backfill

2-23 Replacing Joints in 42' Pipe between MH-1-EE & MH2-AA

2-26 Drawing Revisions

Sincerely,

Rulph C. mostini

RCM/acg

cc:	B. Steketee K. Petterson G. Grundmann	1740 1740 CS6G		
	K. Lichtenheld	CS6G		
	L. Kreh	F2ED		
	L. Bumbicka	1740	MCK	4084511
	R. Nelson	1740		

FROM

INAME-LOCATION-PHONE: Bruce W. Steketee - 17	40	
DATE : October 25, 1985	cc. Gordon Grundmann CS6 Ralph Martini 174	
Main South Trunk Sewer	Ken Petterson 174 Larry Bumbicka 174	10
AEFTRENCE :	Richard Nelson 174 L∈e Kreh F2E	-
TO : Jeff Mc Queeny - 1740		

Summarizing our 10/17/85 review of the subject project and the projection of treatment cost related to dewatering, the following items were discussed.

- Recent progress has been good with 1100' out of a total 1800' of 42" pipe installed and tested.
- Pipe installation is expected to be complete to the 3-BB tie-in, NE of Department 245, in February, 1986.
- Acid brick installation is currently the critical path to completion of the 3-BB tie-in. Manpower for these actitities can and will be increase as work is available.
- Alberici has not been able to reach agreement with the unions on working a rolling 4 day, 10 hourd operation.
- Based on the above, it was agreed that a review of improved work schedule should take place in February with emphasis on reducing work requiring dewatering after July 1, 1986. Current projection is 3 months with two dewatering pumps in operation.
- A summary bar chart schedule will be developed to monitor general progress toward these projections.

Brue al Statue

Bruce W. Steketee

acg

WGK 4084512

IN - 10 (REV. 8/77)

MONSANTO

From:	G.A. Grundmann	CS6G	Corr	orate Engineering	(4-6112)
Date:	October 25, 1985			D.R. Bowers	CS6G
Subj:	Project Progress	Meetings		L.V. Bumbicka R.M. Calles	1740* CS6G
				M.A. Coco J. Colling	Alberici 1740
Re:	CEA 3808 - Main S	outh Trunk	Sewer	R.J. Geile E.R. Hartman	CS6G CS6G
TO:	J.J. Beckerle W. Bodine	Alberici* Alberici		P.R. Hoemann L.C. Kreh	1740 F2ED
	T.N. Carrico	1740		F.A. Mayse	CS6G
	W.C. Koester K.W. Lichtenheld			B.W. Steketee R.L. Wiese	1740* CS6G
	C.J. Lotz R.L. Nelson	Alberici 1740*		*Present at meeting	- !
	K.W. Petterson R.C. Martini	1740* 1740		•	•
	O.N. Shipley	1740			
	R. Schlereth R.B. Knoll	Fleischer Fleischer			

Following are minutes of the meeting held at the CED construction trailers on 10/24/85 at 9:30 a.m.

1. Construction Progress

- a. Backfilling in progress between 2-AA and 2-BB, 2-BB and 2-CC, and in lateral L-64.
- b. Piling being driven from 2-DD to 3-AA, and has been completed between 2-BB and 2-CC.
- c. The one joint that leaked in lateral run L-64 leaked after being repaired. A second repair is in progress.
- d. Manhole 1-EE has another leak which is being repaired.
- e. The concrete base for lateral L-63 has been poured. The stub has been set in the manhole 2-AA wall.
- f. Epoxy brick mortar being placed on manhole 2-EE.
- g. Excavation completed approx. 100 feet east of 2-CC.
- h. Flume now installed in manhole 2-CC. Encasements complete on both north and south stub tie-ins. Concrete to be poured south of manhole 2-F. This will allow flume to be made operational.

HCK 4084513

J.J. Beckerle, et al October 25, 1985 Page 2

2. Internal Manhole Work

- a. Manhole 1-BB. Brickwork complete. Cleanup is in progress. Final inspection will then be made for pinholes, etc.
- b. Manhole 1-CC. Floor brickwork complete and wall brickwork approx. 2' high.
- c. Manhole 1-GG. Last furans membrane almost completed.
- d. The next manholes available for brickwork will be 1-EE and 2-EE.
- e. Discussion over what to do with any furan joints that are wider than the maximum allowable tolerance. Only 1 joint appeared to be out of tolerance on manhole 1-BB.

3. Jumper T-3

- a. Work started on 10/22 on the jumper. Core drilling of manhole 33-B scheduled for today.
- b. All materials on site.
- c. Alberici plans to dig and lay 25' per day.
- Cost information received from Alberici and is being reviewed.
- e. Nelson to keep dept. 233 advised.

4. Dept. 245

- a. A small asphalt path for fork trucks needs to be laid north of dept. 245. Nelson.
- b. Alberici plans to continue to drive piling all the way to manhole 3-BB in the next weeks.

5. Miscellaneous

- a. <u>Crain</u> has assembled electrical supply information. Needs to issue. <u>Nelson</u> to get plant approval.
- b. The potential for additional use taxes based on the Illinois State audit is being reviewed by the Monsanto tax department.

J.J. Beckerle, et al October 25, 1985 Page 3

- c. Manhole 2-FF options still in review. May go to manhole 2H or 2P. Nelson and Lichtenheld.
- d. Discussion was held over Alberici's not getting sufficient concrete over the rebar in some encasement areas. <u>Alberici</u> has taken steps to slightly widen the encasement to avoid this situation.
- e. The rubble west of dept. 245 will be removed as soon as possible.
- f. <u>Alberici</u> reminded of detail on drawing S-5 that requires that "waterstop-plus" be used on new to existing encasement joints.
- g. Alberici requested to review project cleanup.

The next progress meeting will be held on Thursday, October 31 at 9:30 a.m. at the construction trailers. All Monsanto personnel are to meet prior to this meeting at 9 a.m.

Gordon Grundmann

2178Z

Late Truck Luce 3868

A. Korel (Flacker-Suger) Stellerle (Allevier). S. Shundman H. Chichtenhelor B. Stellers H. Ditton

MONSANT:

From:	G.A. Grundmann	<u>CS</u> 6G	Cor	orate	Engineering	(4-6112)
Date:	October 11, 1985		cc:	D.R.	Bowers	CS6G
			_	L.V.	Bumbicka	1740
Subj:	Project Progress	Meetings		R.M.	Calles	CS6G
-				M.A.	Coco	Alberici
				J.	Colling	1740
Re:	CEA 3808 - Main S	South Trunk	Sewer	R.J.	Geile	CS6G
				E.R.	Hartman	CS6G
TO:	J.J. Beckerle	Alberici*		P.R.	Hoemann	1740
	W. Bodine	Alberici		L.C.	Kreh	F2ED
	T.N. Carrico	1740*		F.A.	Mayse	CS6G
	W.C. Koester	Alberici		B.W.	Steketee	1740
	K.W. Lichtenheld	CS6G*		R.L.	Wiese	CS6G
	C.J. Lotz	Alberici*				
	R.L. Nelson	1740*		*Pres	ent at meeting	
	K.W. Petterson	1740*				
	R.C. Martini	1740*				
	O.N. Shipley	1740				
	R. Schlereth	Fleischer	Seeger*			
	R.B. Knoll	Fleischer	Seeger		•	

Following are minutes of the meeting held at the CED construction trailers on 10/10/85 at 9:30 a.m.

1. Construction Progress

- a. Backfill in progress between manholes 2-BB and 2-CC.
- b. All 42° VCP between manholes 2-AA and 2-BB encased. 60 feet encased between manholes 2-BB and 2-CC.
- c. Excavation in progress east of manhole 2-CC and will start next week on laterals out of manholes 2-AA and 2-BB.
- d. Joints completed in 15° VCP lateral L-64.
- e. The precast section between manholes 1-JJ and 1-D-1 has been assembled and the joints made. Probably test next week.
- f. The last two 42" VCP joints west of manhole 2-CC were hydro tested and did not leak.
- g. Piling is being pulled and driven east of manhole 2-DD.

2. Internal Manhole Work

a. Manhole 1-AA. Flume bricks ground to insure smooth flow ahead of flume. Pinholes less than 1/8" deep filled. Pinholes deeper than 1/8" drilled out with 1/4" drill and filled. Nelson and Lichtenheld to make a final inspection.

NGK 4084517

J.J. Beckerle, et al October 11, 1985 Page 2

- b. Manhole 1-BB. Currently installing wall brick. There is some discrepancy in the length of the bricks. Fleischer Seeger will use the 7 3/4" and 7 7/8" brick in all locations as they are in spec. The bricks which are 8" long and beyond the tolerance will be used on the floor where they do not have to be mixed with arch brick.
- c. Manhole 1-CC. The strip mesh is being installed today. The final furan membrane layer will be started on 10/14.
- d. Manhole 1-GG. Currently installing the 2nd asphaltic membrane layer.
- e. Installation of the wall brick will be as follows: The first 2 rows will be stacked. This will allow for the floor deviations. Brick will be cut as necessary so that the top of the 2 rows of bricks is level. (2 rows of brick are required because this means that offset bricks are long enough to cut. Cannot cut smaller piece.)

After this, a running bond will be used for the brick.

All joints are to be 1/8° nominal. No joints should be greater than 3/16°.

- f. Bricks will continue to be cut wet. They will be dried by setting on top of a propane heater in the winter or dipping in a powdered water absorption mixture in the warmer weather.
- g. Fleischer Seeger to buy low amperage draw heaters to be compatible with Alberici's electrical cart capabilities. Nelson to get plant safety approval.
- h. Fleischer Seeger will need the next manhole on 10/21.

Jumper T-3

Still hope to start work around 10/14. The plant turnaround has been delayed until approx. mid-November. The dates are not yet firm. It may be possible to start the manhole work since it will not interfere with the turnaround.

Nelson will review plan this manufacturing the week of 10/14.

4. Dept. 245

The culvert pipe has been installed during the shutdown and backfilling is in progress. The railroad tracks will be reinstalled on 10/11/85.

J.J. Beckerle, et al October 11, 1985 Page 3

1

Dept. 245 will start back up on 10/13 or 10/14.

CED Construction and Alberici personnel did a fine job on this snutdown installation work.

The 4° water line will be reinstalled on Saturday, 10/2/85.

5. ACL Shutdown

- This shutdown has been delayed to December. The dates are not yet firm.
- b. The precast pipe sections have been assembled.

6. VCP Joints

a. Review of the curing time required before testing of the VCP joints was discussed. Monsanto requires that the joints be fully cured in accordance with specifications before testing, whereas Alberici contends that the joints can be tested sooner as stated in the manufacturer's literature.

Steketee to write letter clarifying Monsanto's position.
This will be the basis of further discussions.

Until resolution is reached, the 2 joints west of manhole 2-CC are not to be encased.

- b. Alberici has submitted a procedure for repair of lateral L-35. Nelson and Lichtenheld reviewing.
- c. Lotz and Petterson to review the furan mixing procedure to insure that the mixing continues to meet the specifications.

7. Miscellaneous

a. Agreement was reached with Laidlaw and several piles of dirt were hauled to their dump site. All dirt shipments are signed off by Nelson or Quick.

Washing of the rubble on the south side of pile 2 will be done in the near future so it can be hauled to the dump.

- b. A new option has been offered to resolve the manhole 2-FF situation and that is to go to manhole 2-H. Petterson to get inverts. Nelson to review condition of manhole.

 Alberici to determine credit for deletion of manhole 2-FF and pipe run to 2-CC.
- c. The epoxy injection procedure for repairing the hairline crack in manhole 1-EE was reviewed and approved. <u>Alberici</u> to execute ASAP.

MGK 4084519

J.J. Beckerle, et al October 11, 1985 Page 4

- d. <u>Crain</u> needs to furnish electrical power supply data to sample house. <u>Crain</u> also needs to furnish flume data to field on levelness required for flume installation, etc.
- e. The large pieces of rock and asphalt are to be removed from the dirt prior to backfilling. Martini and Alberici to determine on an ongoing basis the cost distribution since both parties are responsible for some of the rubble in the dirt.
- f. The ACL SO₂ facilities are back to normal. The final work in progress is the repair of some asphalt and concrete.
- g. Alberici to furnish information on construction options in reference to Steketee's letter of 9/12/85.

The next progress meeting will be held on Thursday, October 17 at 9:30 a.m. at the construction trailers. All Monsanto personnel are to meet prior to this meeting at 9 a.m.

Sordon Grundmann

2178z

	T.Carrico - WGK, Extension 2095			
*E	October 21, 1985	L. Bumbicka K. Lichtenheld - CS6G		
###ECT	Status Report on CEA 3808	R. Martini		
	Since October 8	R. Nelson		
FFRENCE		K. Petterson		
:	P. Hoemann	O. Shipley B. Steketee		
	No change on L-34 and L-35.			
	Manhole 1-AA accepted and top set i	n place.		
	Manhole 1-BB wall brick completed t	oday, October 21.		
	Manhole 1-CC brick work started on	walls.		
	Manhole 1-GG Furan strips being ins	talled today, October 21.		
Manhole I-EE repaired and tested still leaks.				
	Backfilling along 42" at grade from except in area of 1-EE.	1-AA to the southeast corner of BBZ		
	L-64 encased and stubbed out on nor continue forms removed from encases	th end of 2-EE for plant repairs to ent.		
	Backfilling in progress between 2-AA and 2-BB, also between 2-BB and 2-CC. A passage road is available between 2-BB and 2-CC.			
		me work in progress between 2-CC and 2-EE to facilitate removal of the inch main in the way of the project east of track 6.		
	Culvert and utility changes as scheduled in during Department 245 turn- around.			
	Tracks 3 and 4 back in service price	r to Department 245 start up.		
	Excavation work continuing between	2-CC and 2-DD.		
	Number 11 dewatering pump will be a power drop is completed by Lowry El			
		Jose Canada		
		T. Carrico Operations Foreman		
		'L'P		

HGK 4084521

IN 1120

KEY PROJECT PERSONNEL CEA 3808 MAIN SOUTH TRUNK SEWER August 24, 1985

	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		PLANT		
-	- NAME	CED PHONE	PHONE 812+		FUNCTION
	LOU C. BECK	7388		CS4G	PLD
	JIM J. BECKERLE	:	274-7621		ENG-ALBERICI
	WARREN BODINE	;	274-7621		CONST. SUP.
	LARRY V. BUMBICKA		2404	1740	PLANT ENG.
	TOM N. CARRICO		2159	1740	MAINTENANCE
	LENNY N. DEWALD		2182	1740	CONST. ENG.
	MAC S. FELD	6676	· .	CS66	MECH. ENG.
•	RICH C. FERRARIO	6342		CSéG	COST ENG.
	RON L. FLYNN	6359		CS6G	E/I ENG.
	GORDON A. GRUNDMANN	6112	<u>.</u>	CS6G	PM-CED
	BILL C. KOESTER	- :	274-7621		PM-ALBERICI
	KEN W. LICHTENHELD	6627		C566	PROJ. ENG.
	CHRIS J. LOTZ	:	274-7621		PROJ. ENG.
	RALPH C. MARTINI		2164	1740	CONST. ENG.
	DICK L. NELSON		2633	1740	PLT. REP.
	KEN W. PETTERSON		2166	1740	CONST. ENG.
	BRUCE W. STEKETEE		2181	1740	SITE SUPT.
	OWEN N. SHIPLEY		2165	1740	CONST. ENG.

ALBERICI'S HOME ADDRESS

J. S. ALBERICI CONSTRUCTION CO., INC.
2150 KIENLEN AVENUE
ST. LOUIS, MO. 63121

WGK 4084522

7

MONSANTO

From:	G.A. Grundmann	CS6G	Corporate Engineering	(4-6112)
Date:	October 18, 1985	co		CS6G
Subj:	Project Coordinat	ion Meeting	R.J. Geile	1740 CS6G
Re:	CEA 3608 - Main S	outh Trunk Sewer	L.C. Kreh B.W. Steketee F.A. Mayse	F2ED 1740* CS6G
TO:	T.N. Carrico	1740	R.C. Ferrario	CS6G
	K.W. Lichtenheld R.C. Martini R.L. Nelson	CS6G 1740* 1740*	*Present at meetin	ıg
	K.W. Petterson	1740*		

Following are minutes of the meeting held at the CED construction trailers on 10/17/85 at 9:00 a.m.

1. Manhole 3-BB to 3-EE

Discussion continued on the amount of work, if any, that can be done until after manhole 3-BB is complete and turned into service.

It is possible that the 42° VCP could be installed down to manhole 3-CC. This would involve removal of the existing 36° encased VCP from 3-BB to 3-CC.

In order to determine the feasibility of this approach, the sewer flows must be checked to see if the 24° line into manhole 3-DD can handle the flows. Nelson and Lichtenheld.

2. Construction Options

Discussion was held over improving the schedule by initiating some construction options such as working four 10-hour days with Friday as a makeup day or four rolling tens, etc. The intent of these options is to minimize the additional dewatering costs that will be incurred after July 1, 1986.

The current thinking is that there is not much advantage in these approaches until manhole 3-BB is tied in next spring. The best time to consider using these options is on the work south of manhole 3-BB to the end of the job. Only 2 dewatering pumps would be in service during this time period. While this is a minimal time period, speeding up the project for this work would further decrease the dewatering costs.

These options will be periodically reviewed in the coming months.

T.N. Carrico, et al October 18, 1985 Page 2

Special working arrangements would, of course, have to be worked out with the unions in order to take any of these special approaches.

This information __ passed on to Jeff McQueeny _n 10/17/85.

3. VCP Joints

There have been disagreements with Alberici on the proper time to test the VCP joints. See the Progress Minutes for details.

Gordon Grundmann

1124C

MONSANTO

From:	G.A. Grundmann	CS6G	Corr	orate Engineering	(4-6112)
Date:	October 18, 1985		cc:	D.R. Bowers L.V. Bumbicka	CS6G 1740
Sup:	Project Progress	Meetings		R.M. Calles	CS6G
-				M.A. Coco	Alberici
				J. Colling	1740
Re:	CEA 3808 - Main S	South Trunk	Sewer	R.J. Geile •	CS6G
				E.R. Hartman	CS6G
TO:	J.J. Beckerle	Alberici*		P.R. Hoemann	1740
	W. Bodine	Alberici		L.C. Kreh	F2ED
	T.N. Carrico	1740		F.A. Mayse	CS6G
	W.C. Koester	Alberici*		B.W. Steketee	1740*
	K.W. Lichtenheld	CS6G		R.L. Wiese	CS6G
	C.J. Lotz	Alberici			
	R.L. Nelson	1740*		*Present at meeting	
	K.W. Petterson	1740*		•	
	R.C. Martini	1740*			
	O.N. Shipley				
	R. Schlereth		Seeger		
	R.B. Knoll	Fleischer			

Following are minutes of the meeting held at the CED construction trailers on 10/17/85 at 9:30 a.m.

1. Construction Progress

- a. Piling has been driven from 2-CC to 2-DD and for the 24° stub to the north of MH 2-CC. Piling will next be driven from 2-DD to 3-AA. A telephone wire will be relocated on 10/22 to avoid interference.
- b. Excavation in progress between 2-CC and 2-DD.
- c. Excavation complete for lateral south of 2-AA and the lateral north of 2-CC.
- d. Backfilling in progress between 2-AA to 2-BB and 2-BB to 2-CC.
- e. The concrete encasement is complete between 2-BB to 2-CC.
- f. 19 joints were tested on lateral L-64 (2-AA to 2-EE). Only l joint leaked.
- g. Having great difficulty in finding good pipe to tie into on the existing pipe run north of 2-EE and leading to existing manhole 2-B-2.
- h. The existing 24" pipe to the north of 2-CC is being chipped out and looks good as a tie-in pipe.

J.J. Beckerle, et al October 18, 1985 Page 2

2. Internal Manhole Work

- a. Manhole 1-AA: Complete
- b. Manhole 1-BB: The wall brickwork is in progress and should be complete by 10/22.
- c. Manhole 1-CC: The final furan membrane has cured. Brickwork to start today on floor.
- d. Manhole 1-GG: The 1st furan membrane has been applied and is curing.
- e. The next manhole that will be available for lining is probably manhole 1-EE. A crack is being repaired. This manhole should be available by 10/25.

Manholes 2-AA, 2-BB and 2-CC will next be available at weekly intervals.

Manholes 1-DD and 1-JJ will be available after the ACL shutdown (12/2).

1-GG and 2-EE will also become available in a number of weeks.

- f. Fleischer Seeger will try to avoid installation of any chipped brick in the manholes.
- g. The heaters purchased by Fleischer Seeger have been approved for use by the plant.

3. Jumper T-3

- a. Dept. 233 shutdown will start 10/18 and complete 10/22. Work can start on the jumper 10/23 or 10/24.
- b. Material (except Y's) due 10/18.
- c. Carrico to furnish safety procedures for manhole entry.
- d. <u>Alberici</u> has final sketch for routing. <u>Lichtenheld</u> getting this information added to project drawings.
- e. Procedures in progress for tie-ins to manholes. <u>Petterson</u>, <u>Lichtenheld</u> and <u>Nelson</u>.
- f. Alberici to furnish costs for eliminating the jumper as originally routed and the cost for the new routing.

J.J. Beckerle, et al October 17, 1985 Page 3

4. Dept. 245

3

The culvert has been installed and the railroad tracks are back in service.

5. ACL Shutdown

- a. The shutdown is currently scheduled for 12/2.
- b. The procedure for tying in to manholes 1-JJ and 1-D-1 is almost completed. <u>Petterson</u>.

6. VCP Joints

a. There was agreement that cure times for the joints are time/temperature related per previous agreements. The joint should also be hard enough so that a nail or knife point can't dent the surface.

No further joints will be tested prior to a full cure approved by Monsanto.

- b. Koester felt that the pre-job conference minutes need to be added to the contract as an addendum. Monsanto disagreed.

 Grundmann to obtain further opinions.
- c. Approval with comments for the L-35 repair procedure will be given to <u>Alberici</u> on 10/18.

7. Miscellaneous

- a. <u>Alberici</u> to furnish savings to delete manhole 2-FF and pipe run to 2-CC. <u>Koester</u>.
- b. <u>Crain</u> in process of getting electrical power supply data for sample house. <u>Nelson</u> needs to get plant approval.

Literature on flume also required.

- c. Alberici plans to use the 2nd 15" precast section of pipe to go under railroad track #3 on lateral L-85. The pipe run from 2-DD will be 15" instead of 12" and reduced to 12" for remainder of run.
- d. The state of Illinois has requested that Alberici pay taxes on certain materials. Grundmann to review with accounting. Monsanto is obligated by contract to pay these taxes if it is determined that the state is indeed owed these taxes.

J.J. Beckerle, et al October 18, 1985 Page 4

- e. Alberici and Petterson to review the inside surface of manhole 1-DD to determine what areas are not per specification. This will allow wall repairs to be made.
- f. Alberici furnished information in reply to Steketee's letter of 9/12/85 pertaining to construction options.

The next progress meeting will be held on Thursday, October 24 at 9:30 a.m. at the construction trailers. All Monsanto personnel are to meet prior to this meeting at 9 a.m.

ordon Grundmann

2178Z

MONSANTO

From:	G.A. Grundmann	CS6G	Corpor	ate	Engine ering	(4-6112)
Date:	October 14, 1985		cc:	F.A.	Mayse	CS6G
Subj:	Project Status Me	eting				
Re:	CEA 3608 - Main S	outh Trunk	Sewer			
TO:	L.V. Bumbicka K.W. Lichtenheld R.C. Martini J.J. McQueeny R.L. Nelson B.W. Steketee	1740 CS6G 1740 1740 1740 1740				

Please plan to attend a meeting in Jeff McQueeny's office at 1:00 p.m. on Thursday, October 17. We will briefly discuss the status of the project and future plans.

Gordon A. Grundmann

2377C

Monsento Company Corporate Engineering Department Saugat, Illinois 82201

> October 11, 1985 MC/JSA Letter #10

J.S. Alberici Construction Company W.C. Koester

Subject: Testing 42" Pipe - CEA 3808 South Trunk Sewer

Alberici recently has tested 42" piping prior to full cure of the joint material. This procedure is outside of the project specifications and can not be accepted by Monsanto. Without full curing of the joint material the final integrety of the joint can not be ensured.

Project specification 2-F5, (copy attached) paragraph 1.3 states that a Pre-Job Conference shall be held with the minutes of this meeting becoming a part of the specification. The Pre-Job Conference was held 1/22/85 and states "Cannot Hydro Test prior to total curing" (Paragraph F, Item 1).

Hydro Testing prior to total curing of the joint material will be sufficient reason to assume the curing of the joint has been stopped and will subject Alberici to costs for removal and replacement of such joints. Piping currently installed between manholes 2-AA and 2-BB have been tested prior to full cure of the joint material and are subject to final acceptance by Monsanto.

B.W. Steketee

Site Construction Manager

BWS/acg attachment

CC: I). Bowers	CS6G
I	L. Kreh	F2ED
	. Grundmann	CS6G
1	K. Lichtenheld	CS6G
1	R. Martini	1740
1	 Petterson 	1740
C). Shipley	1740
I	. Bumbicka	1740
F	R. Nelson	1740
C	. Lotz	Alberici

From:	Gordon A. Grundm	ann CS6G	Corpo	rate	Engineering	(4-6112)
Date:	January 23, 1985			•	Bowers Bumbicka	CS6G 1740
Subj:	Pre-Job Conferen	ce	_		Calles	CS6G
Re:	CEA 3808 - Main		E	.R.	Coco Hartman Kreh	Alberici CS6G F2ED
TO:	W. Bodine	Alberici			Mayse	CS6G
	T. Carrico	1740			Murphy	1740
	W. Franke	Pennwalt			Wiese	CS6G
	J. Imrie	Imrie Sales				
	R. Knoll	Fleischer Seeger				
	W. Koester	Alberici				
	K. Lichtenheld	CS6G				
	C. Lotz	Alberici				
	R. Nelson	1740				
	K. Petterson	1740				
		Pennwalt			•	
	O. Shipley	1740				

A pre-job conference was held at the construction trailers at 9:00 a.m. on 01/22/85 to discuss membranes and acid brick details for the manholes on the project. Most of the details discussed in the meeting are part of the project specifications and are not covered in this memo. The details summarized below primarily cover additional clarification or emphasis on portions of the specifications:

... A. Cast In-Place Concrete Manholes

- 1. Sheppard noted that it is often worthwhile to check the actual chute operator at the concrete supplier to ensure they are furnishing the proper mix.
- 2. Any voids that can be seen <u>visually</u> in the concrete surface need to be repaired prior to membrane installation. The patch mix per the specifications is 2-parts sand to 1-part Portland cement. (The mix stated in the meeting was not per the specifications).
- 3. All of the moisture must be out of the concrete walls before applying the membrane. This is also true after hydro test.

B. Asphalt Membrane System

- 1. Apply when the temperature is over 40°P.
- 2. The hot asphalt is approximately 360°P during application. This presents a burn hazard which means that safety measures must be taken here.

MGK 4084531

- 3. A primer is first applied over the entire surface. It is important that the surface be thoroughly covered.
- 4. The layers of asphalt are applied from the bottom up. The squeegee used is usually wood or masonite.
- 5. The fiberglass cloth is applied starting at the top.
- 6. The asphalt thickness is 1/4". The reason for not getting too great a thickness of asphalt is that the material has the capability to flow and could break the bond of the bricks at some future time.

C. Furan Resin Membrane System

- 1. The furan and substrate must be 60°P minimum regardless of the air temperature.
- 2. A maximum of 80° F for installation is suggested because the working life of the furan above this temperature gets very short.
- The white glass sheathing cloth must be worked into the mortar until it is entirely black (the color of the mortar).
- 4. Curing times are specified, but work should not proceed if a knife point can be pushed into the furan. If it can, then the furan has not completed its curing.

D. Acid Brick

- 1. The surface temperature of the brick must be 60°P minimum. This means pallets of brick must be restacked after receiving in a checker-board fashion to ensure that the inner bricks are at the proper temperature. Ventilation is required under the brick so it does not absorb moisture from the ground. The guideline temperature for laying brick is 60°-80°P. The mortar temperature has the same guidelines. If the temperature is above 80°P up to a maximum of 90°P, the bricklayer must lay the brick very quickly and this increases the risk of the mortar hardening before the bricks can be properly laid.
- Monsanto will furnish the power for heating and refrigerating units to either heat or cool the brick as required.

- 3. When mixing the furan, mix the power into the liquid to avoid lumping (as opposed to the reverse). Spread mortar out to prevent deep mixes or there is the ultimate possibility of the mix catching on fire.
- 4. When a prick is placed, mortar must be extruded all around. This ensures full joints.
- 5. Bricks are not all that uniform, and the bricklayer must choose his bricks to obtain the nominal 1/8" thick joint.
- After the brick is installed, 8-days of curing at 70°F are required.
- 7. Double-buttering is required on the brickwork.
- 8. The joint design recommended by R. Knoll has been accepted. Knoll to resubmit drawings for approval.

E. General

- 1. All materials to be used for the membranes and brickwork have been approved.
- 2. It was clearly stated that all this work must be executed strictly in accordance with the specifications. Any revisions must be cleared and approved by Monsanto.
- 3. R. Knoll intends to use the same personnel for the entire project. This would include: Rich Schlereth of Pleischer Seeger who will periodically check the progress of the job, a brick foreman (on the job all the time), one or two bricklayers, and a laborer.
- 4. The next seminar, which will be held specifically for the craftsmen who will do the work, is expected to take place in early March.
- Sheppard is sending <u>Grundmann</u> inspection guidelines which will be distributed.

F. Furan Joints on 42° Pipe

- 1. Cannot hydro test prior to total curing. If water penetrates the furan, it will stop the cure.
- 2. Shutdown of work in the trench due to benzene safety concerns caused concern over the curing of two joints. Curing will start if the pipe itself (not just the air) is at 550-600P. It is okay to restart a cure if it has to be stopped.

NGK 4084533

W. Bodine, et al Page 4 January 23, 1985

If a cure never did start because of too low a temperature, and more than four-days elapses, then the joint must be redone since the furan will not ultimately reach proper strength after a delay of this length of time. The two joints questioned were at sufficient temperature when the work was shut down due to benzene safety concerns, and they are okay since the cure had started. Loss of bonding is the concern with starting the cure too late. If you could scrape the furan off the pipe with a knife, then the bonding was improper.

3. Alberici is considering placing a bag enclosure around the outside of the pipe to localize the heating. Guidelines were established. Ideally the temperature inside the pipe and outside should be the same. A 10°F differential is acceptable. More than 10°F differential up to 20°F absolute maximum is marginally acceptable, but not recommended. Sheppard suggested the possible use of tarps over the pipe alongside the joints to help minimize the loss of heat through the pige walls.

Gordon A. Grundmann

mb/0048C

CEA 3808 Spec 2F-5
W.G. Krummrich Date 2/6/84
Sauget, IL YARD CHEMICAL SEWERS - CLAY PIPE Rev 0
8657Y

1. GENERAL

1.1 Scope This specification covers materials and methods of constructing gravity sewers for chemical drainage. The sewers, manholes, inlets and other appurtenances shall be constructed to the dimensions, lines and invert elevations shown on the drawings.

1.2 Related Work Specified Elsewhere

Earthwork	Spec	3E -1
Cast-In-Place Concrete	Spec	3E-1
Chemical Resistant Brickwork	Spec	4D-1
Trench Pipe Bedding and Encasement	A8.2	STD 9
Yard Chemical Sewers	A8.2	STD 21

1.3 Pre-job Conference

Prior to starting any pipe joint work, all installation foremen and workmen performing this work shall be trained by a training representative of the manufacturer of the chemical resistant joint materials. The Field Engineer and/or a Monsanto representative shall be in attendance at this meeting. Minutes of this conference will be taken, agreed to by all attendees, and become a part of this Specification.

1.4 <u>Job Experience</u> This Contractor shall show written evidence of the successful completion of three jobs within the last five years similar to this work.

1.5 Product Delivery, Storage, and Handling

Joint cements, asbestos roving, mortar, aggregates, etc., shall be stored so that they may be maintained in a dry condition. Storage temperature limitations-stated by manufacturers shall be observed.

Do not drop or roughly handle the pipe and fittings.

Provide platforms or dunnage so materials are not stored on the ground.

2. PRODUCTS

2.1 Clay Pipe Extra strength clay pipe and fittings shall be specially tested and selected pieces that conform to ASTM C-700 and additionally as follows:

WGK 4084535

Page 1

Monsanto Company Corporate Engineering Department Sauget, Illinois 62201

October 9, 1985

J.S. Alberici Construction Co.

C.J. Lotz

Subject:

CEA 3808 South Trunk Sewer

Manhole Repairs

Reference:

JSA Letter CRL to RM dated October 8,1985

Relating to our many conversations this past week concerning the repairs required for the cracked wall of manhole 1-EE, we feel that the manhole is defective workmanship and therefore a responsibility of the J.S. Alberici Company to repair under the GMP contract.

An attempt was made by Alberici forces to make a repair to this manhole the last week of September and it was unsuccessful - it still leaked.

At this time Monsanto stated that the method used by you to make the repair was unsatisfactory to us and we suggested that a pressure injected grout be used for the repair. You, then requested that a procedure be given to you for the repair, which we did on October 1,1985.

Please effect the required repairs to this manhole, so that the job can proceed. You are delaying the progress of your masonry contractor for lining the manholes.

Sincerely,

Ralfle C. Martini
Ralph C. Martini

RCM/acg

CC: B. Steketee - 1740
K. Petterson - 1740
G. Grundmann - CS6G
K. Lichtenheld - CS6G
L. Kreh - F2ED
L. Bumbicka - 1740
R. Nelson - 1740

OCIL BUNGA

CONSTRUCTION CO., INC.

October 8, 1985

Monsanto Company Route 3 Sauget, IL 62201

ATTN: Mr. Ralph Martini

Ref: Monsanto Krummrich Project 3808

Manhole Repairs

Gentlemen:

Per our conversation of October 3, 1985, and in accordance with your procedure, we propose to repair the cracked wall of manhole 1-EE for the Lump Sum of Eight Hundred Eighteen Dollars (\$818.00).

We feel this repair to be above and beyond the contract requirements as the procedure forwarded to us and received on October 1, 1985, is not part of the project specifications and as such could not have been properly evaluated and added to the job estimate prior to bid opening and negotiations.

Please issue a CFO to the contract as soon as possible as this manhole will soon hold up future work.

Sincerely yours,

J. S. ALBERICI CONST. CO., INC.

Christopher J. Lotz Project Engineer

CJL/ral

cc: G. Grundmann

B. Steketee

K. Lichtenheld

K. Petterson

W. C. Koester

File

007 h 1985

NGK 4084537

Gralget to

2150 KIENLEN AVENUE 'ST. LOUIS, MISSOURI 63121 UNITED STATES OF AMERICA



TELEPHONE (314) 261-2611 TELECOPIER (314) 261-4225

CHAME LOCATION T. Carrico - WGK, Extension 2095			
SA*E	October 8, 1985	L. Bumbicka	
		K. Lichtenheld - CS6G	
SUB FOT	Status Report on CEA 3808	R. Martini	
	-	R. Nelson	
AFFERENCE		K. Petterson	
		O. Shipley	
TO	P. Hoemann	B. Steketee	

No change on L-34 and L-35.

Manhole 1-AA finished but not acceptable to the plant. Brick finish irregular.

Wall brick work started in 1-BB.

1-CC in curing stage between Furan layers.

1-GG in asphaltic membrane stage.

I-EE still needs to be repaired.

Joints between 2-AA and 2-BB being prepared to concrete pour.

Several passes made on 15 inch L-64 line.

Nineteen joints encased between 2-BB and 2-CC.

Culvert work started Friday at Department 245.

T. Carrico Operations Foresan

skg

Monsanto Company Corporate Engineering Department Saugat, Illinois 62201

> October 7, 1985 MC/JSA Letter #8

J.S. Alberici Construction Co. W. C. Koester

Subject:

CEA 3808 South Trunk Sewer

Bracing Material

Reference: J.S. Alberici Letter to WCK to

LCK dated 9/16/85

As you noted in your letter on this subject, Monsanto had indicated prior to the start of the project that open trench would have to be limited to approximately 400 feet. From the start of work, however, J.S. Alberici Field Representatives have requested that they be allowed to excavate additional trench. After several reviews with plant personnel and at considerable disruption to plant traffic patterns, Monsanto agreed to allow Alberici to open additional trench. Monsanto did not request this action and are of the opinion that the such decisions have been made by Alberici effectively managing the project under the Guaranted Maximum Price contract.

We recognize that contaminated soil uncovered between MH 1-EE and 2-BB caused disruption of the work and required reassignment of workers. At no time, however, was the project shutdown due to contamination other than in isolated sections of the trench. Crew levels remained stable and work continued on manholes, laterals and jumpers.

It should be noted that prior to February 26, 1985, 19,164 ft. of shoring had been received on site. This relates to approximately 600 feet of trench shroing. Additional shoring was approved on CFO 2-26 for lateral L-64.

Monsanto does not agree to an increase in the GMP as a result of the shoring available on the project.

B.W. Steketee

WGK 4084539

Site Construction Manager

BWS/acg

CC:

G. Grundmann CS6G K. Lichtenheld CS6G R. Martini 1740 O. Shipley 1740

L. Kreh 1740

L. Bumbicka 1740

Monsanto Company Corporate Engineering Department Sauget, Illinois 62201

> October 7, 1985 MC/JSA Letter #9

J.S. Alberici Construction Co. W. C. Koester

Subject:

CEA 3808 South Trunk Sewer Manhole Finish & Acceptance

Reference: JSA Letter CRL to RM dated August 20, 1985

Tolerances for cast-in-place manhole surfaces are to conform to ACI 347 - stated in the contract specifications. Inspection shall include conforming to paragraph 3.3.8 "Tolerances for formed surfaces cast-in-place". Irregularity allowances shall follow type "C" class of surface to be within 1 gradual and %" abrupt when checked with a 5 foot template.

Please correct any deficiencies found to exist outside of the specifications.

B.W. Steketee Site Construction Manager

BWS/acg

CC:

Chris Lotz - Alberici R. Martini - 1740 K. Petterson - 1740 G. Grundmann - CS6G K. Lichtenheld - CS6G L. Kreh - F2ED - 1740 L. Bumbicka R. Nelson - 1740

3.25—Use specified size and capacity of form ties or clamps.

3210 — Forms should be inspected and checked before the reinforcing steel is placed to insure that the dimensions and the location of the concrete members will conform to the drawings.

3.2.11—Form coatings must be applied before placing of reinforcing steel and must not be used in such quantities as to run onto bars or concrete construction joints.

3.2.12—Forms should be sufficiently tight to prevent loss of mortar from the concrete.

3.2.13—Forms should be thoroughly cleaned of all dirt, mortar, and foreign matter and coated with a release agent before each use. Where the bottom of the form is inaccessible from within, access panels should be provided to permit thorough removal of extraneous material before placing concrete. If surface appearance is important, forms should not be reused after damage from previous use has reached the state of possible impairment to concrete surfaces.

32.14—Control joints, construction joints, and expansion joints should be installed as specified.

3.2.15—Blockouts, inserts, and embedded items should be properly identified, positioned, and secured.

MCK 4084541

3.3—Suggested tolerances

Tolerance is a specified permissible variation from lines, grades, or dimensions given in contract drawings.

Tolerances should be specified by the engineer/ architect so that the contractor will know precisely what is required and can design and maintain his formwork accordingly. The suggested tolerances herein are similar to those specified on important work or major structures by many public agencies and private firms." In specifying these tolerances or some modifications of them, it should be remembered that specifying tolerances more exacting than needed may increase construction costs.

Contractors are expected, and should be required, to establish and maintain in an undisturbed condition until final completion and acceptance of a project, control points, and bench marks adequate for their own use and for reference to establish tolerances. (This requirement may become even more important for the contractor's protection when tolerances are not specified or shown.) The engineer/architect should specify tolerances or require performance within generally accepted limits. Where a project involves particular features sensitive to the cumulative effect of generally accepted tolerances on individual portions, the

engineer/architect should anticipate and provide for this effect by setting a cumulative tolerance. Where a particular situation involves several types of generally accepted tolerances, i.e., on the concrete, on location of reinforcement, on fabrication of reinforcement, etc., which become mutually incompatible, the engineer/architect should anticipate the difficulty and specify special tolerances or indicate which controls. The contract specifications should clearly state that a permitted variation in one part of the construction or in one section of the specifications must not be construed as permitting violation of the more stringent requirements for any other part of the construction or in any other such specification section.

The engineer/architect should be responsible for coordinating the tolerances for concrete work with the requirements of other trades whose work adjoins the concrete construction.

This section suggests tolerances that are consistent with modern construction practice considering the effect that permissible deviations will have on the structural action or operational function of the structure. Surface defects such as "blowholes" and "honeycomb" concrete surfaces are defined as "finish defects" and are to be distinguished from tolerances described herein.

Where tolerances are not stated in the specifications or drawings for any individual structure or feature thereof, permissible deviations from established lines, grades, and dimensions are suggested below. The contractor is expected to set and maintain concrete forms so as to insure completed work within the tolerance limits.

No tolerances specified for horizontal or vertical building lines or footings should be construed to permit encroachment beyond the legal boundaries.

3.3.1 Tolerances for reinforced concrete buildings?

3.3.1.1 Variations from the plumb.

- Maximum for entire length 1 in.
 (b) For exposed corner columns, control-joint
 - grooves, and other conspicuous lines
 In any 20 ft of length ¼ in.
 Maximum for entire length ½ in.
- 3.3.1.2 Variation from the level or from the grades indicated on the drawings.

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^{*}Designers employed by federal agencies required to follow Building Research Advisory Beard recommendations are advised that the BRAB telerances on fermioric are often more according than the according to the second beards and the second bear

tVariations from plumb and knoor building lines on upper stories of high rise structures (above 300 ft high) are special cases which may require special tolerances.

volumes

(a) In slab soffits,* ceilings, beam soffits, and	3.3.2.4 Variation from specified width of sec-
in arrises	tion at any height.
In any 10 ft of length 4 in.	4 of 1 percent plus 1 in.
In any bay or in any 20 ft of length. % in.	. 3.3.2.5 Variation from established height of
Maximum for entire length 4 in.	lining.
(b) In exposed lintels, sills, parapets, horizontal	½ of 1 percent plus 1 in.
grooves, and other conspicuous lines	3.3.2.6 Variations in surfaces.
In any bay or in any 20 ft of length 4 in.	Invert ¼ in. in 10 ft
Maximum for entire length ½ in.	Side slopes 1/2 in. in 10 ft
3.3.1.3 Variations of distance between walls,	3.3.3 Tolerances for monolithic siphons and cul-
columns, partitions, and beams.	verts
¼ in. per 10 ft of distance, but not	3.3.3.1 Departure from established
more than ½ in. in any one bay, and	alignment. 1 in
not more than 1 in. total variation	3.3.3.2 Departure from established profile
3.3.1.4 Variation of linear building lines from	grade 1 in.
established position in plan 1 in.	3.3.3.3 Variation in thickness.
3.3.1.5 Variation in the sizes and locations of	At any point: minus 2½ percent or ¼ in.,
sleeves, floor openings, and wall openings.	whichever is greater
Minus ¼ in. Plus ½ in.	At any point: plus 5 percent or ½ in.,
	whichever is greater 3.3.3.4 Variation from inside dimensions,
3.3.1.6 Variation in cross-sectional dimensions	% of 1 percent
of columns and beams and in the thickness of slabs and walls.	3.3.3.5 Variations in surfaces.
Minus ¼ in.	Inverts ¼ in. in 10 ft
Plus 4 in.	Side slopes 1/2 in. in 10 ft
3.3.1.7 Footings.	3.3.4 Tolerances for bridges, checks, overchutes,
	drops, turnouts, inlets, chutes, and similar struc-
(a) Variation in dimensions in plan	tures
Minus	3.3.4.1 Departure from established
when formed, or plus 3 in. when placed	alignment
against unformed excavation	3.3.4.2 Departure from established grades 1 in.
(b) Misplacement or eccentricity	3.3.4.3 Variation from the plumb or the speci-
2 percent of the footing width in the	fied batter in the lines and surfaces of columns,
direction of misplacement but not	piers, walls, and in arrises.
more than 2 in.†	- Exposed, in 10 ft 4 in.
(c) Reduction in thickness	Backfilled, in 10 ft 1 in.
Minus 5 percent	3.3.4.4 Variation from the level or from the
of specified thickness	grades indicated on the drawings in slabs, beams,
3.3.1.8 Variation in steps.	horizontal grooves, and railing offsets.
(a) In a flight of stairs	Exposed, in 10 ft
Rise 1/2 in.	3.3.4.5 Variation in cross-sectional dimensions
Tread ¼ in.	of columns, piers, slabs, walls, beams, and similar
(b) In consecutive steps	parts.
Rise	Minus ¼ in.
Tread 1/4 in.	Plus ½ in.
3.3.2 Tolerances for concrete canal lining	3.3.4.6 Variation in thickness of bridge slabs.
3.3.2.1 Departure from established alignment.	Minus
2 in. on tangents	Plus ¼ in.
4 in. on curves	3.3.4.7 Footings. Same as for footings for build-
3.3.2.2 Departure from established	ings.
profile grade 1 in.	3.3.4.8 Variation in the sizes and locations of
3.3.2.3 Reduction in thickness of lining.	slab and wall openings 4 in.
10 percent of specified thickness: pro-	
vided, that average thickness is main-	"Variations in slab posities are to be measured before removal
tained as determined by daily batch	"Variations in also peffix are to be measured before removal of supporting sheres; the contractor is not responsible for varia- tions due to deflection, except when the latter are correborator? evidence of inferior concrete quality or curing, in which case only the net variation due to deflection can be considered.

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3.3.4.9 Sills and sidewalls for radial gates and
nmilar watertight joints.
•
Variation from the plumb or level
Not greater than % in. in 10 ft
2.3.5 Tolerances in mass concrete structures
3.3.5.1 Variation of the constructed linear out-
line from established position in plan.
In 20 ft ½ in.
In 40 ft
3.3.5.2 Variations of dimensions to individual
structure features from established positions.
In 80 ft or more
In buried construction Twice the
above amounts
3.3.5.3 Variation from the plumb, from the
specified batter, or from the curved surfaces of
all structures, including the lines and surfaces of
columns, walls, piers, buttresses, arch sections,
vertical joint grooves, and visible arrises.
In 10 ft
In 20 ft % in.
In 40 ft or more
In buried construction Twice the
above amounts
••
2.3.5.4 Variation from the level or from the
grades indicated on the drawings in slab and beam
soffits, horizontal joint grooves, and visible arrises.
In 10 ft
In 30 ft or more
In 30 ft or more
In 30 ft or more ½ in. In buried construction Twice the above amounts 3.3.5.5 Variation in cross-sectional dimensions of columns, beams, buttresses, piers, and similar members. Minus ¼ in. Plus ½ in. 3.3.5.6 Variation in the thickness of slabs, walls, arch sections, and similar members.
In 30 ft or more ½ in. In buried construction Twice the above amounts 3.3.5.5 Variation in cross-sectional dimensions of columns, beams, buttresses, piers, and similar members. Minus ¼ in. Plus ½ in. 3.3.5.6 Variation in the thickness of slabs, walls, arch sections, and similar members. Minus ¼ in.
In 30 ft or more

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3.3.6 Tolerances for concrete tunnel lining and cast-in-place conduits

3.3.6.1 Departure from established alignment or from established grade.

Free-flow tunn	els and conduits 1 in.
High velocity t	unnels and
conduits	
Railroad tunne	ls
3.3.6.2 Variation i	n thickness at any point.
Tunnel lining	and a minus G
Conduits	minus 2½ percent
	or ¼ in., whichever is greater
Conduits	plus 5 percent
	or ¼ in., whichever is greater
3.3.6.3 Variations	from inside dimensions.
W of 1 percent	

3.3.7 Tolerances for vertically slipformed structures up to 600 ft high (not applicable for liftform; see Section 3.3.1) †

3.3.7.1 Maximum horizontal deviation (translational plus rotational) of any point on the structure with respect to a corresponding point at the base of the structure shall not exceed I in. per 50 ft of height above the base, nor 3 in., whichever is smaller. Building cores and shafts slipformed and tying into other adjacent work should meet tolerances shown in Section 3.3.1.1.

3.3.7.2 For circular structures, variations from prescribed diameter or variation from true circular cross section shall be not more than ± 1 in. or $\pm \%$ in. per 10 ft of diameter, whichever is larger, but in no case more than ± 3 in.

3.3.7.3 Variation from prescribed inside width dimensions for noncircular structures shall not exceed ±½ in. per 10 ft of width, nor ±2 in. total.

3.3.7.4 Variation from prescribed wall thickness, -% in. and +1 in.

3.3.7.5 Top elevation of blockouts, +2 in., minus zero. Bottom elevation of blockout, plus zero inches, and -2 in. Sides of blockouts may vary ±½ in. from specified location, but the opening width must not be less than specified.

3.3.8 Tolerances for formed surfaces cast-in place—This section provides a way of quantitatively indicating tolerances for surface variations due to forming quality, but is not intended to apply to surface defects attributable to placing and consolidation deficiencies. Allowable irregularities for the purpose of defining tolerances are designated either abrupt or gradual. Offsets and fins resulting from displaced, mismatched, or misplaced forms, sheathing, or liners or from defects in forming materials are considered abrupt irregularities. Irregularities resulting from warp-

[&]quot;Applies to concrete dimensions only, not to positioning of vertical reinforcing bers or dowels.

1For sile construction telerances refer to ACI 313-77, Reference 7-12.

TABLE 3.3.8—PERMITTED IRREGULARITIES IN FORMED SURFACES CHECKED WITH A 5 FT TEMPLATE

Type of		Class of s	urface	
Type of irregularity	A	В	C	D
Gradual	⅓ 1∏.	1 ₄ in.	1 ₂ m.	l in.
Abrupt	% in.	4 in.	1/4 ID.	1 in.

ing, unplaneness, and similar uniform variations from planeness or true curvature are considered gradual irregularities.

Gradual irregularities should be checked with a 5-ft template, consisting of a straightedge for plane surfaces or a shaped template for curved or warped surfaces. In measuring irregularities, the straightedge or template may be placed anywhere on the surface in any direction.

Four classes of formed surface are defined in Table 3.3.8. The engineer/architect should indicate which is required for the work he is specifying.

Class A is suggested for surfaces prominently exposed to public view, where appearance is of special importance. Class B is intended for coarse textured concrete formed surfaces intended to receive plaster, stucco, or wainscoting. Class C is a general standard for permanently exposed surfaces where other finishes are not specified. Class D is a minimum quality requirement for surfaces where roughness is not objectionable, usually applied where surfaces will be permanently concealed. Special tolerances may be needed for surfaces continuously exposed to flowing water, drainage or exposure. If those tolerances are different from those given in Table 3.3.8 they should be specified by the engineer/architect.

3.3.9 Tolerances for precast prestressed concrete individual members—Forms for this type of construction should be true to size and dimensions shown on plans and should be constructed and protected from warping so that the finished product will be within the limits given below unless otherwise noted on contract drawings and specifications. These tolerances are intended primarily for precast prestressed members produced in the field.

3.3.9.1 Overall dimensions of members

=1% in. per 10 ft, maximum of ±1% in.

3.3.9.2 Cross-sectional dimensions.

Sections less than 6 in. ±1% in.

Sections over 6 in. and less

than 18 in. ±3/16 in.

Sections 18 in. to 36 in. ±1% in.

Sections over 36 in. ±1% in.

3.3.9.3 Deviations from straight line in long

Not more than % in. per 10 ft length

3.3.9.4 Deviation from specified camber

= 1/2 in. per 10 ft of span

3.3.9.5 Maximum differential between adjacent units in erected position to be one-half the allowance for deviation from specified camber.

3.3.10 Suggested tolerances for precast concrete
—Forms must be true to size and dimensions of
concrete members shown on the plans and be so
constructed that the dimensions of the finished
product will be within the limits given below at
the time of placement of these units in the structure, unless otherwise noted on engineer/architect
drawings. These tolerances are intended primarily
for precast members produced in the field.

3.3.10.1 Overall dimensions of members

± 1/2 in. per 10 ft, maximum of ± 1/4 in.

3.3.10.2 Cross-sectional dimensions.

Sections less than 6 in. =\frac{1}{2} in.

Sections over 6 in. and less
than 18 in. =\frac{3}{16} in.

Sections 18 in. to 36 in. =\frac{1}{2} in.

Sections over 36 in. =\frac{1}{2} in.

3.3.10.3 Deviations from straight line in long sections. Not more than 1/4 in. per 10 ft 3.3.10.4 Deviation from specified camber.

3.3.10.5 Maximum differential between adjacent units in erected position. 4 in.

3.4-Shoring and centering

3.4.1 Shoring—Shoring must be supported on satisfactory foundations such as spread footings, mudsills, or piling as discussed in Section 2.7.

Shoring resting on intermediate slabs or other construction already in place need not be located directly above shores or reshores below unless thickness of slab and the location of its reinforcement are inadequate to take the reversal of stresses and punching shear. Where the latter conditions are questionable the shoring location should be approved by the engineer/architect.

All members must be straight and true without twists or bends. Special attention should be given to beam and slab, or one-way and two-way joist construction to prevent local overloading when a heavily loaded shore rests on the thin slab.

Multitier shoring assemblies supporting forms for high stories must be set plumb and the separate parts of each shore located in a straight line over each other, with two-way horizontal bracing at each splice in the shore unless the entire assembly is designed as a structural framework or truss. Particular care must also be taken to transfer the horizontal loads to the ground of

If the about Thursday 10,7195, your office, afternoon, say 1 coper Gundrand is assently working with allower on the grints we discussed to establish on up-to-date jud aclanded.

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MONSANTO

From:	G.A. Grun " Enn	<u>CS6G</u>	Corporate Engineer	ring (4-6112)
Date:	September 20, 198	6.5	cc: D.R. Bowers	CS6G
	_		L.V. Bumbicka	1740
Subj:	Project Progress	Meetings	R.M. Calles	CS6G
-			M.A. Coco	Alberici
			J. Colling	1740
Re:	CEA 3608 - Main	South Trunk	Sewer R.J. Geile	CS6G
			E.F. Hartman	CS6G
TO:	J.J. Beckerle	Alberici	P.R. Hoemann	1740
	W. Bodine	Alberici	L.C. Kreh	F2ED*
	T.N. Carrico	1740*	F.A. Mayse	CS6G
	W.C. Koester	Alberici*	B.W. Steketee	1740*
	K.W. Lichtenheld	CS6G*	R.L. Wiese	CS6G
	C.J. Lotz	Alberici*		
	R.L. Nelson	1740*	*Present at me	eting
	K.W. Petterson	1740*	**Part time	•
	R.C. Martini	1740*		
	O.N. Shipley	1740		
	R. Schlereth	Fleischer	Seeger**	

Following are minutes of the meeting held at the CED construction trailers on 9/19/85 at 9:30 a.m.

1. Construction Progress

- a. Hydro test of 2 exotherm joints passed. This allows manhole 1-EE to be water tested (9/20/85). All pipe between manholes 1-EE and 2-AA has been concrete encased. This allows piling to be pulled between these manholes (except for sheet piling at manhole 1-EE). Backfilling can then be completed.
- b. Approximately 20 joints will be tested on 9/20/85 between manholes 2-BB and 2-CC.
- c. All 42° pipe has been placed in the trench between manholes 2-AA and 2-BB. Joint installation work is in progress. Plan to test by the end of next week on this run.
- d. The bases for manholes 2-CC and 2-EE have been poured, and the walls are being formed.
- e. The cleanout has been installed on lateral L-34 and the remaining pipe encased. This lateral can now be totally backfilled.
- f. Sample house received and will be set 9/19/85.
- g. There is some muck in the trench between manholes 2-AA and 2-EE. This area needs to be dried up so base can be laid.

J.J. Beckerle, et al September 12, 1985 Page 2

- h. Work in progress on the section of pre-encased pipe that goes between manholes 1-JJ and 1-D-1.
- The sewer pipe on the north side of manhole 1-GG has been tied into the existing ACL line. Joints are complete and curing. The line will be encased Monday.
- j. Piling will be driven starting next week between manholes 2-CC and 2-DD.
- k. Cleanup of the area continues.

2. Internal Manhole Work

- a. Manhole 1-AA. Flume and floor brickwork are complete. Now bricking walls.
- b. Manhole 1-BB. The cloth strips are being applied today. The finish coat of furan will be applied Monday. Brickwork to start approx. 1 week from Monday (9/30/85).
- c. Manhole 1-CC. The final asphalt membrane layer will be installed starting 9/20/85. The furan membrane work will start immediately after this work is complete.
- d. It was noted that the cloth installation on the furan should be in sections approx. 38" x 38" maximum.
- e. Fleischer Seeger will need a fourth manhole to work on in about 2 weeks.

. 3. Jumpers

- a. The final details of the T-3 jumper should be resolved today. Lichtenheld. Alberici can then order the fittings.
- b. Manhole entry procedures required for the two manholes (4C and 33B). <u>Martini</u> and <u>Carrico</u>.
- c. Lichtenheld to make one final check of flows with Nelson.
- d. The T-3 jumper work is now scheduled to start 10/3. There are a number of reasons for proceeding with this work immediately:
 - The ground water level is now very low and no dewatering will be required.
 - The weather is good. (As opposed to winter installation.)

J.J. Beckerle, et al September 12, 1985 Page 3

> We need to find out if we have any problems installing this jumper ASAP so we can make adjustments if necessary.

4. Department 245

- a. Piling for culvert pipe under track 4 to be driven starting on Monday, 9/23.
- b. A list of guidelines for working around the 245 area follows: (From Jody Colling)
 - 1) The tunnel will be installed 10/1 to 10/11.
 - 2) Exploratory digging is complete.
 - 3) Before starting the work between manholes 2-DD to 3-AA, the following items need to be accomplished.
 - a) Provide slab access north end of old CED warehouse pad.
 - b) Need forklift bridge across 2-CC to 2-DD trench for access to dept. 245 from south.
 - c) Finish exploratory digging (complete).
 - 4) 2-CC to 2-DD must be finished before starting north of dept. 245 on the 3-AA to 3-BB trench. (Possible problem area.)
 - 5) Look at providing access from the west to the east north of manhole 2-AA.
 - 6) Must have box car unloading dock access north of 3-AA to 3-BB excavation.
 - 7) Must modify east truck dock before starting 3-AA to 3-BB.
- c. In order to maintain the operation of dept. 245, work from manholes 3-BB to 3-CC may be restricted. (This situation needs to be reviewed to see if there is a way around this limitation.)
- d. The ground water level is currently very low north of dept. 245. Nonetheless, a dewatering pump is being installed by 9/20 at \$11 hole to insure a dry excavation.

J.J. Beckerle, et al September 12, 1965 Page 4

5. ACL Shutdown

Nelson has furnished the following information pertaining to the ACL shutdown:

The present scheduled *maintenance turnaround* for dept. 251 (ACL) is to begin 11/12/85. The minimum outage presently scheduled is 12 days.

During the first day or day and a half, the dept. will be in a "wash down" phase. Upon completion of the wash down sewer flows will be minimized. There will be no major process flows in the existing 15" or 18". A small quantity of water will be flowing from the treatment facilities during this period.

The existing flows in the 18" sewer from the treatment facilities are: 450 gpm; temp of 20° to 30°C and a ph 1 to 1.5.

The suggested material of construction for the flume through manhole 1-DD for this stream is Fibercast CL2030 piping.

6. Miscellaneous

. .

- a. The pipe from manhole 2-FF interferes with the 42" pipe coming out of manhole 2-CC. Two options are being reviewed:
 - 1) The sewer pipe from manhole 2-FF may have to flow to manhole 2-DD.
 - 2) Manhole 2-FF could be eliminated and pipe changes on existing manholes may be made.

<u>Lichtenheld</u> and <u>Nelson</u> to look at the existing manholes to determine their condition and suitability for this work.

- b. Construction will work this Saturday and will extract or drive piling. <u>Carrico</u> to handle permits.
- c. Procedures for tie-ins of each manhole have been discussed to manhole 2-AA. <u>Martini</u> and <u>Petterson</u> to publish these procedures for review and comment.
- d. Water is leaking into the portion of the trench that has been excavated east of manhole 2-CC. <u>Petterson</u> to resolve. (This is not a dewatering problem.)

J.J. Beckerle, et al September 12, 1985 Page 5

e. Discussions were held pertaining to interpreting the Monsarta specifications for manhole wall and encasement tolerances relating to bulges and depressions. Alberici and Monsanto currently disagree. The discussion centered around manhole 1-DD. Resolution was delayed until the surfaces of manhole 1-EE can be checked after the water test is complete.

The next progress meeting will be held on Thursday, September 26 at 9:30 a.m. at the construction trailers. All Monsanto personnel are to meet prior to this meeting at 9 a.m.

Sordon Grundmann

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MONSANTO

From:	G.A. Grundmann	CS6G	Corporate	Engineering	(4-6112)
Date:	October 4, 1985		ce: D.R.	•	CS6G
Subj:	Project Coordinat	ion Meeting	R.J.	Bumbicka Geile	1740* CS6G
Re:	CEA 3808 - Main S	outh Trunk Sewer		Steketee	F2ED 1740*
				Mayse Ferrario	CS6G CS6G
TO:	T.N. Carrico K.W. Lichtenheld R.C. Martini	1740* CS6G* 1740*	*Pres	ent at meetin	g
	R.L. Nelson K.W. Petterson O.N. Shipley	1740* 1740* 1740			

Following are minutes of the meeting held at the CED construction trailers on 10/3/85 at 9:00 a.m.

1. Manhole 3-BB to 3-EE

There will probably be a delay in performing the work between these manholes since manhole 3-BB probably needs to be totally complete and released for operation before excavation can proceed south of 3-BB.

Martini raised this subject prior to the meeting. The subject needs to be addressed at future meetings so detailed planning can occur.

2. Inspection

Bumbicka advised that the site looked good for the inspection.

3. VCP Joint Testing

The joints between manholes 2-AA and 2-BB were hydro tested before the final pass had totally cured. All joints passed the hydro test, and it was agreed that the test was acceptable. Lichtenheld and Nelson will review the manufacturer's literature on this subject preparatory to future discussions with Alberici.

4. Acid Brickwork

Nelson raised some concerns over the acid brickwork installation. Details are in the Project Progress Meeting minutes.

ordon Grundmann

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J.S. ALBERICI CONSTRUCTION CO., INC.

October 4, 1985

Monsanto Company Route 3 Sauget, IL 62201

Attention: Mr. Bruce Steketee/C.E.D.

Ref: Monsanto Krummrich 3808

South Main Trunk Sewer Project

Gentlemen:

In recent weeks, it has become quite evident that Mr. Dick Nelson has become disruptive to the daily progress and harmony of the referenced project by his continuous questioning of Alberici labor personnel concerning matters that can best be answered by J. S. Alberici representatives, Chris Lotz, Jim Beckerle, or Warren Bodine, through the proper channels. Specifically, Mr. Nelson continues to ask our joint mixing crew where we keep the epoxy resins or if we use epoxy resins in the preparation and making of VCP pipe joints. This type of conduct is nothing more that a disruptive nuisance and should be stopped.

On other occasions, I have noticed Mr. Nelson holding court with groups of labor personnel. When he talks they understandably listen and when they listen, work does not get done. Mr. Nelson has also been talking to the mixing crew, telling them they should thicken the joint butter material. If Mr. Nelson and Monsanto would like to accept all aspects of responsibility for this project, they can continue to direct the field personnel in daily operations, but until then, all conversations and questions should be directed as previously agreed to J. S. Alberici representatives as listed above.

Your attention to this matter would be greatly appreciated as this project does not need any further disruptions or delays. We will be glad to answer any questions posed by Monsanto.

Sincerely yours,

J. S. ALBERICI CONST. CO., INC.

Christopher J. Lotz Project Engineer

cc: R. Martini

K. Petterson

G. Grundmann

L. Bumbicka

W. C. Koester

File

CJL/ra1
2°50 KIENLEN AVENUE
5T. LOUIS, MISSOURI 69121
UNITED STATES OF AMERICA



WEK 4084554

TELEPHONE (314) 261-2611 TELECOPIER (314) 261-4225 TELEX 44-2438

MONSANTO

Prom:	G.A. Grundmann	CS6G	Cor	porate Engineering	(4-6112)
Date:	October 4, 1985		cc:	D.R. Bowers L.V. Bumbicka	CS6G 1740*
Subj:	Project Progress	Meetings		R.M. Calles M.A. Coco	CS6G Alberici
Re:	CEA 3808 - Main S	outh Trunk	Sewer	J. Colling R.J. Geile E.R. Hartman	1740 CS6G CS6G
TO:	J.J. Beckerle W. Bodine T.N. Carrico W.C. Koester			P.R. Hoemann L.C. Kreh F.A. Mayse B.W. Steketee	1740 F2ED CS6G 1740*
	K.W. Lichtenheld C.J. Lotz R.L. Nelson K.W. Petterson R.C. Martini O.N. Shipley R. Schlereth R.B. Knoll	Alberici* 1740* 1740* 1740* 1740		R.L. Wiese *Present at meeting	CS6G

Following are minutes of the meeting held at the CED construction trailers on 10/3/85 at 9:30 a.m.

1. Construction Progress

- a. The final passes are being made today on the 42° VCP joints between manholes 2-BB and 2-CC.
- b. The 11 joints between manholes 2-AA and 2-BB all passed the hydro test.
- c. The 15° VCP had been laid in the trench between manholes 2-AA and 2-EE. Joint work will start today. (Lateral L-64)
- d. Manhole 2-EE walls poured and stripped.
- e. The concrete base has been completed to manhole 2-CC.
- f. A large portion of the concrete encasement between manholes 2-BB and 2-CC has been completed. Will strip 10/7.
- g. Piling is being pulled between 1-EE and 2-AA. The piling between manholes 2-BB and 2-CC will be pulled next.

Started driving piling between 2-DD and 3-AA.

- h. Backfilling between manholes 1-EE and 2-AA. Fabric and 9° of stone are being placed on top.
- i. Backfill completed around manhole 1-GG.
- j. Lateral L-34 has been completed. Backfilling is almost complete.
- k. Sample lines installed in manholes 1-CC and 1-GG.
- The #8 and #33 tracks east of manhole 1-EE have been reinstalled. The crossing plates will be installed by Friday. This work should allow not only rail traffic, but also vehicle traffic down "H" street.

2. Internal Manhole Work

- a. Manhole 1-AA. Brickwork complete. Pinholes have been identified and need to be repaired.
- b. Manhole 1-BB. Brickwork has started.
- c. Manhole 1-CC. The mesh cloth is being installed over the first furan membrane.
- d. Manhole 1-GG. Primed on 10/2.
- e. Lotz to discuss the following concerns with Pleischer Seeger who were not present at the meeting.
 - 1) The brickwork on the flume in manhole 1-AA is not smooth in some areas. This lack of smoothness could distort the water flow readings.
 - 2) In some instances half of a half brick is being used on the wall installation. The specification calls for not less than one-half a brick.
 - 3) Fleischer Seeger is wet cutting the bricks and not installing them in a dry condition as required by the specifications. They are to review the options for insuring that the brick is dry during installation.

NGK 4084556

- f. The heaters that <u>Fleischer Seeger</u> uses draw more current than is available from <u>Alberici's</u> cart system. Options to be reviewed. Propane heaters are not acceptable (open flame).
- g. The question was raised as to whether it might be advisable to cover the 42° pipe openings while working in the manholes. This would minimize the possibility of any fumes getting into the manholes. Nelson to review subject with plant safety.
- h. The comment was made that new bricklayers need to be briefed on our requirements such as double buttering of each brick, etc.

3. Jumper T-3

- a. Alberici has ordered the fittings.
- b. Start of the jumper work during the 3rd week in October will eventually conflict with a turnaround in this area during the weeks of 10/21 and 10/28. To get around this restriction, installation of the jumper may be started from the west. Nelson to determine the time period when the crane will actually be used on 4th Street.
- c. Furan may be used in place of Tufchem on the pipe joints, if desired by <u>Alberici</u>. There will be no additional cost.
 - d. <u>Lichtenheld</u> to issue final updated drawing for this jumper showing all cleanouts, etc.
 - e. Procedures for tying into manholes 4C and 33B are being written. Petterson, Lichtenheld and Nelson.
 - f. <u>Lichtenheld</u> studying plug options and ways to pump the excess flow during heavy rainstorms.

4. Dept. 245

a. Removal of 4° water line is proving difficult due to existing shutoff valves which have failed. Excavation of the trench for the culvert pipe will begin as soon as this line is removed.

- b. The 16" water line has been removed.
- c. It has been possible to remove track #3 to allow the culvert installation since track #8 east of ACL is being reinstalled. Track #4 has also been removed.
- d. A CFO has been issued covering the culvert pipe installation work.

5. ACL Shutdown

- a. Procedures for tie-in to existing manholes 1-JJ and 1-D-1 are in progress. Petterson to obtain elevation information and <u>Lichtenheld</u> will complete.
- b. A CFO has been issued to cover this 15° section of VCP.

VCP Joints

- a. Discussions were held over the amount of curing time required prior to hydro testing. <u>Lichtenheld</u> and <u>Nelson</u> to review the subject.
- b. Alberici to furnish for approval a procedure for repairing the L-35 lateral pipes. The gap between the pipes needs to be addressed in this procedure.
- c. Since the hot summer temperatures which caused the exotherm problems should be gone, it will be acceptable to go back to a 2-pass joint installation procedure.

7. Miscellaneous

- a. Quick met with Laidlaw on 10/3/85 to discuss dirt removal.

 If all conditions are satisfied with the state, it may be possible to get rid of some dirt.
- b. Alberici to check to insure that Dickey will send the hydro certificates for the VCP.
- c. Procedures for manholes 1-DD and 2-CC have been issued for review. <u>Nelson</u> has completed review. <u>Lichtenheld</u> will review now prior to issue.

- d. <u>Alberici</u> has ordered materials for fluming manhole 2-CC. A CFO needs to be issued. A review of Alberici's estimate will be made by <u>Martini</u> and <u>Ferrario</u>.
- e. Petterson is working with Lowry to insure that Alberici will have sufficient electrical power for heaters, etc.
- f. <u>Lichtenheld</u> reviewing 3 options to resolve the manhole 2-FF situation. <u>Petterson</u> to furnish invert information.
- g. The acceptable repair method for the hairline crack in manhole 1-EE is pressure injection of epoxy. <u>Alberici</u> is assembling data on this method for review by <u>Lichtenheld</u> and Nelson.
- h. Crain to furnish information on the electrical power supply to the sample house by 10/11/85.
- i. Alberici commented that only a couple of days would be required to drive the piling between the culvert pipe north of dept. 245 and manhole 3-BB. This would mean minimal interruption to the department when this work was done.
- j. Beckerle mentioned that on October 4 a year ago Alberici moved onto the site to start the sewer project.

The next progress meeting will be held on Thursday, October 10 at 9:30 a.m. at the construction trailers. All Monsanto personnel are to meet prior to this meeting at 9 a.m.

2178Z

HGK 4084559

ordon Grundmann

10/2/55

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166 Grimed, Fuan 1-Cl, Buchevale

m. 1-BB.

Electrical security publica

T-3 fuan junto oliny.

CHAME - COLAT DN - PRINCE T. Carrico - WGK, Extension 2095				
DATE		September 30, 1985	L. Bumbicka	
		•	K. Lichtenheld - CS6G	
SUBJECT		Status Report on CEA 3808	R. Martini	
		•	R. Nelson	
REFERENCE			K. Petterson	
			O. Shipley	
TO	:	P. Hoemann	B. Steketee	

L-34 backfill is near grade level.

Manhole 1-AA brick work should be finished this morning.

Brick work starting in 1-BB today.

Furan membrane in progress in 1-CC.

Tie-in north of 1-GG encased and backfilled.

I-EE has a hairline crack which needs repair.

Eleven joints between 2AA and 2BB OK, preparing for encasement.

Nineteen joints between 2-BB and 2-CC being prepared for encasement.

Soldier beams in place for Department 245 culvert work.

Number 11 pump set, but needs to be piped up.

Number 13 pump on line at Department 245.

Jumper T-3 being held up due to fittings not on site.

T. Carrico Operations Foreman

skg

From:	G.A. Grundmann	CS6G	Corpo	rate	Engineering	(4-6112)
Date:	September 26, 198	15			Bowers Bumbicka	CS6G
Subj:	Project Progress	Meetings	R	t.M.	Calles Coco	CS6G Alberici
Re:	CEA 3808 - Main S	outh Trunk	Sewer R	ī. l.J.	Colling Geile	1740 CS6G
TO:	J.J. Beckerle W. Bodine	Alberici* Alberici	P	R.	Hartman Hoemann Kreh	CS6G 1740 F2ED*
	T.N. Carrico W.C. Koester	1740*	F	.A.	Mayse Steketee	CS6G 1740
	K.W. Lichtenheld C.J. Lotz	Alberici*			Wiese	CS6G
	R.L. Nelson K.W. Petterson	1740* 1740*			ent at meeting t time	
;	R.C. Martini O.N. Shipley R. Schlereth	1740* 1740 Floischer	Caagartt			
	R.B. Knoll	Fleischer	•			

Following are minutes of the meeting held at the CED construction trailers on 9/26/85 at 9:30 a.m.

1. Construction Progress

- a. All 19 joints between manholes 2-BB and 2-CC passed the hydro test.
- b. The 11 joints between manholes 2-AA and 2-BB will be tested today.
- c. Backfilling is in progress between manholes 1-EE and 2-AA, 1-DD and 1-EE, and around 1-GG.
- d. Poured manhole 2-CC walls. Will pour manhole 2-EE walls by 9/27.
 - e. Poured concrete base from manhole 2-AA to 2-EE (except at end) and small portion remaining just west of 2-CC.
 - f. Will install 15° VCP in trench from manhole 2-AA to 2-EE by 9/27/85.
 - g. Preparations almost complete for pouring concrete from manholes 2-BB to 2-CC.
 - h. Will excavate south of manhole 2-AA for lateral L-63 next week.

J.J. Beckerle, et al September 26, 1985 page 2

- i. Sample house set and bolted down.
- j. Manhole 1-EE leaked at a hairline crack in the wall. Repairs will be performed.
- k. The pipe from ACL to the north of manhole 1-GG has been encased. The flume is also in place.
- Lagging and some piling pulled between manholes 1-EE and 2-AA last Saturday.
- m. Piling was driven for the culvert pipe north of dept. 245 and also east of manhole 2-CC.

2. Internal Manhole Work

- a. Manhole 1-AA. The acid brickwork will be complete on 9/27/85.
- b. Manhole 1-BB. The final furan coat is curing. Brickwork to start 9/30/85.
- c. Manhole 1-CC. The first course of furan has been installed and is curing.
- d. Work will begin on manhole 1-GG on 9/30/85. The next manhole after this will be needed in 2-3 weeks.
- e. The subject of speeding up the internal manhole work was discussed. Fleischer Seeger would always use one crew for the membrane installation work because there is so much curing time involved.

If they were to improve the schedule, they would double the acid brickwork crews.

At this time, this approach is not possible due to .. unavailable manholes. This approach may be instituted at future critical timing points in the project.

- f. <u>Fleischer Seeger</u> to give <u>Alberici</u> their power requirements for heaters to be used in the manholes so that <u>Alberici</u> can get their electric carts set up.
- g. Nelson requested that <u>Fleischer Seeger</u> see if they can minimize the number of small pieces of brick that are installed around the 42° VCP.

J.J. Beckerle, et al September 26, 1985 Page 3

h. Since the top row of bricks will not come out to be exactly 8", two smaller lengths of bricks will be used to fill this space. A minimum of a half brick length (4") will be used, e.g., a 9" space would be filled by using a row of 5" bricks and a row of 4" bricks.

The last brick in the circumferential row will be a minimum of one half of the brick thickness.

i. Any holes in the mortar will be checked for and repaired as the scaffolding is taken down.

3. Jumper T-3

- a. <u>Alberici</u> to order the fittings ASAP since the delivery is approx. 2 weeks.
- b. A CFO needs to be written on the T-3 jumper work to account for any cost differences based on the revised routing. Martini.
- c. Depending on the fittings delivery, work can probably start the 3rd week in October. This date needs to be resolved and given to Nelson so he can advise production.
- d. The procedures for tying in to manholes 4C and 33B need to be finalized. <u>Lichtenheld</u>, <u>Petterson</u>, <u>Martini</u> and <u>Nelson</u>.
- e. <u>Lichtenheld</u> to determine a method (such as pumping) to handle the higher than normal flows during rainstorms. A plug does not appear to be feasible.

4. Dept. 245

- a. Preparations are in place for installing the culvert under track #4 starting 10/1/85. (Completion by 10/11/85).
- b. Nelson to see if track #3 can be out of service for 2 to 10 days. If this is not possible, it may be necessary to work this weekend to get track #8 back in service.
- c. The target time for installing the L-85 lateral is probably late this year. A good time to do this work would be in the winter when the wash track is not being used.
- d. The pump north of dept. 245 has been installed. The water level is low enough so that the culvert pipe can be installed without any problems.

J.J. Beckerle, et al September 26, 1985 Page 4

5. ACL Shutdown

- a. Nelson to find out the earliest possible time the chlorine tracks can be taken out of service <u>before</u> 11/12/85 (if possible).
- b. A CFO has been written for the section of precast pipe to be installed between manholes 1-JJ and 1-D-1 during the ACL shutdown. A procedure for this work to be finalized when Lichtenheld is back the week of 9/30.

6. Miscellaneous

- a. Nelson to review dirt removal with Laidlaw the week of 9/30.
- b. Cleanup in preparation for the upcoming inspection continues. <u>Martini</u> and <u>Alberici</u>.
- c. Nelson and Lichtenheld to work with Alberici to finalize details on the repair procedure to be used to repair the cracked bells on lateral L-35.
- d. Procedures for manholes 1-DD and 2-CC have been given to <u>Alberici</u> to establish timing. <u>Nelson</u> and <u>Lichtenheld</u> making final review.
- e. The flume installation for manhole 2-CC is in progress.

 Delivery on the FRP pipe is 3 weeks or so. This will delay completion. Alberici to check with several other vendors and push the delivery.
- f. Since the weather is turing colder <u>Alberici</u> will probably need to install heaters in the trench for future joint work.
- g. Alternatives are being reviewed on the manhole 2-FF situation. It may be possible to install a larger pipe between two existing manholes and eliminate manhole 2-FF.

 Petterson has obtained inverts of manholes. The condition of the manholes also needs to be reviewed. Lichtenheld and Nelson.

Alberici needs to know decision before they form the manhole 2-DD walls in the event we choose to run the pipe from 2-FF to 2-DD.

h. Experience with the plant sonic device indicates that using it to measure the discharge flows off the dewatering pumps is not feasible. The results on use of this device have been widely erratic.

J.J. Beckerle, et al September 26, 1985 Page 5

Flow sensors and in-line flow meters are being reviewed.

- i. Nelson and Lichtenheld to work up procedure for repair of the hairline crack in manhole 1-EE and give to Alberici.
- j. Information and costs on construction alternates to improve the schedule based on <u>Steketee's</u> letter of 9/12/85 to <u>Bill Koester</u> of <u>Alberici</u> have not yet been received.
- k. Martini to install power to sample house. Crain to furnish.

The next progress meeting will be held on Thursday, October 3 at 9:30 a.m. at the construction trailers. All Monsanto personnel are to meet prior to this meeting at 9 a.m. \bigcirc

Gordon Grundmann

2178Z

HEK 4084566

4/26/85

- South Trunk Sewes L. Gundman Muline Colly ALBERICI FLESCHER - JEEGER R. Helson Knoll FLESCHER- SEEGER Hanicco 1-AA- linish 9/07/85. final furan coat curing 130AYS CURE TIME OU 1-CC Rist Auso Course Tuesday MEM DAAVE Pres 1-66 Monday 1/20 She Regis 200 HGK 4084567

Need to resolve portable cost power requirement Miniming omall pieces around the 2"

ALBERIC!

2-00 to 2-00 leing leiter today

2-00 to leing leiter today

Rachfill at 101 teach and 1-66

Porter base to 2-00

formed grund less 2-EE to 2-00

forming 2-88th 2-00 forlocasmen

Lecare 1-63 nextons 36" studies

2-89

Lingle Boux Hersano to sur gower.

1-EE water listing Vout work and

outside fill and - sing. 1 BANTO to

provide proceeding.

Encourant fluor complete at 1-GG
Parcedus on 1-DD and 2-CC gives for tis-in.
Fulled pileng at 1-EE
Drove 245 turnel piling and continued in piling.
Giling.
Itack 3 needs to be out of service along with track of (need to talk to mits).

Those into making up a floor measurement device for Secretaring periods (talk to talk).

WGK 4084568

FROM E. R. Billen - WGK, 1740 (ext. 2010)

DATE

September 24, 1985

ce L. V. Bumbicka

TOBLOUS

CED - SEWER JOB MAINLY

V. L. Dennis D. T. Mayer

REFERENCE

TO

Guards

Night Superintendents

The contractor suspects minor sabotage of his equipment, etc. as:

- 1. Hydraulic hoses loosened on equipment.
- 2. Linkage pins pulled from backhoe equipment.
- 3. Sewer plug loosened.

It appears to be increasing as they move further into the plant.

Please pay extra attention to people seen around their equipment - especially on weekends.

Earl R. Billen

/dev

MAME-LOCATION-PHONE: T. Carrico - WGK, Extension 2095

BATE : September 23, 1985 cc: L. Bumbicka

K. Lichtenheld - CS6G

SUBJECT : Status Report on CEA 3808 R. Martini

R. Nelson K. Petterson

TO: P. Hoemann 0. Shipley B. Steketee

Sample building set and secured.

L-34 is ready for backfill.

Brick work in lAA about one third completed up wall.

Final Furan application to be applied in 1BB today.

Finalizing asphaltic membrane in 1CC.

Joints made north of 166 - curing finished - testing will be done today.

Retest of joints south of BBZ turned out OK. I-beams were pulled Saturday and backfilling has begun.

Nineteen joints tested out OK between 2BB and 2CC.

Joint being made between 2AA and 2BB.

Manholes 2CC and 2EE being formed.

IEE ready for water testing.

Installing dewatering pump at well 13.

T. Carrico

Operations Foreman

Low Courses

skg

WGK 4084570

MONSANTO

From:	Gordon A. Grundmann CS6G	Corpo	rate	Engineering	(4-6112)
Date:	September 23, 1985	cc:		Bumbicka	1740
Subj:	42° VCP Joints Main South Trunk Sewer		R.C.	Lichtenheld Martini Mayse	CS6G 1740 CS6G
Re:	CEA 3808		R.L.	Nelson Steketee	1740 1740
TO:	J.S. Alberici Personnel		· ·		

Congratulations to everyone involved in the successful testing of the 42" vitrified clay pipe joints. As I understand, 19 out of 19 passed today, and 9 out of 9 passed within the last two weeks.

Good work!

Gordon Grundmann Project Manager

2212C

MONSANTO

From:	G.A. Grundmann	CS6G	Corporate Engineering	(4-6112)
Date:	September 20, 198	. ·	cc: D.R. Bowers	CS6G
	•		L.V. Bumbicka	1740
Subj:	Project Progress	Meetings	R.M. Calles	CS6G
			M.A. Coco	Alzerici
			J. Colling	1740
Re:	CEA 3808 - Main 5	South Trunk		CS6G
• •			E.R. Hartman	CS6G
TO:	J.J. Beckerle	Alberici	P.R. Hoemann	1740
	W. Bodine	Alberici		F2ED*
	T.N. Carrico	1740*	F.A. Mayse	CS6G
	W.C. Koester	Alberici*		1740*
	K.W. Lichtenheld	CS6G*	R.L. Wiese	CS6G
	C.J. Lotz	Alberici*		•
	R.L. Nelson	1740*	*Present at meeting	2
	K.W. Petterson	1740*	**Part time	•
	R.C. Martini	1740*	3 2 3 4 3 2 9	
	O.N. Shipley	1740		
	R. Schlereth	Fleischer	Seeger**	

Following are minutes of the meeting held at the CED construction trailers on 9/19/85 at 9:30 a.m.

1. Construction Progress

- a. Hydro test of 2 exotherm joints possed. This allows manhole 1-EE to be water tested (9/20/85). All pipe between manholes 1-EE and 2-AA has been concrete encased. This allows piling to be pulled between these manholes (except for sheet piling at manhole 1-EE). Backfilling can then be completed.
- b. Approximately 20 joints will be tested on 9/20/85 between manholes 2-BB and 2-CC.
- c. All 42" pipe has been placed in the trench between manholes 2-AA and 2-BB. Joint installation work is in progress. Plan to test by the end of next week on this run.
- d. The bases for manholes 2-CC and 2-EE have been poured, and the walls are being formed.
- e. The cleanout has been installed on lateral L-34 and the remaining pipe encased. This lateral can now be totally backfilled.
- f. Sample house received and will be set 9/19/85.
- g. There is some muck in the trench between manholes 2-AA and 2-EE. This area needs to be dried up so base can be laid.

MGK 4084572

- h. Work in progress on the section of pre-encased pipe that goes between manholes 1-JJ and 1-D-1.
- i. The sewer pipe on the north side of manhole 1-GG has been tied into the existing ACL line. Joints are complete and curing. The line will be encased Monday.
- j. Piling will be driven starting next week between manholes 2-CC and 2-DD.
- k. Cleanup of the area continues.

2. Internal Manhole Work

- a. Manhole 1-AA. Flume and floor brickwork are complete. Now bricking walls.
- b. Manhole 1-BB. The cloth strips are being applied today. The finish coat of furan will be applied Monday. Brickwork to start approx. 1 week from Monday (9/30/85).
- c. Manhole 1-CC. The final asphalt membrane layer will be installed starting 9/20/85. The furan membrane work will start immediately after this work is complete.
- d. It was noted that the cloth installation on the furan should be in sections approx. 38" x 38" maximum.
- e. Pleischer Seeger will need a fourth manhole to work on in about 2 weeks.

3. Jumpers

- a. The final details of the T-3 jumper should be resolved today. Lichtenheld. Alberici can then order the fittings.
- b. Manhole entry procedures required for the two manholes (4C and 33B). <u>Martini</u> and <u>Carrico</u>.
- c. Lichtenheld to make one final check of flows with Nelson.
- d. The T-3 jumper work is now scheduled to start 10/3. There are a number of reasons for proceeding with this work immediately:
 - The ground water level is now very low and no dewatering will be required.
 - 2) The weather is good. (As opposed to winter installation.)

HEK 4084573

3) We need to find out if we have any problems installing this jumper ASAP so we can make adjustments if necessary.

4. Department 245

- a. Piling for culvert pipe under track 4 to be driven starting on Monday, 9/23.
- b. A list of guidelines for working around the 245 area follows: (From Jody Colling)
 - 1) The tunnel will be installed 10/1 to 10/11.
 - 2) Exploratory digging is complete.
 - Before starting the work between manholes 2-DD to 3-AA, the following items need to be accomplished.
 - a) Provide slab access north end of old CED warehouse pad.
 - b) Need forklift bridge across 2-CC to 2-DD trench for access to dept. 245 from south.
 - c) Finish exploratory digging (complete).
 - 4) 2-CC to 2-DD must be finished before starting north of dept. 245 on the 3-AA to 3-BB trench. (Possible problem area.)
 - 5) Look at providing access from the west to the east north of manhole 2-AA.
 - 6) Must have box car unloading dock access north of 3-AA to 3-BB excavation.
 - 7) Must modify east truck dock before starting 3-AA to 3-BB.
- c. In order to maintain the operation of dept. 245, work from manholes 3-BB to 3-CC may be restricted. (This situation needs to be reviewed to see if there is a way around this limitation.)
- d. The ground water level is currently very low north of dept. 245. Nonetheless, a dewatering pump is being installed by 9/20 at \$11 hole to insure a dry excavation.

5. ACL Shutdown

Nelson has furnished the following information pertaining to the ACL shutdown:

The present scheduled "maintenance turnaround" for dept. 251 (ACL) is to begin 11/12/85. The minimum outage presently scheduled is 12 days.

During the first day or day and a half, the dept. will be in a "wash down" phase. Upon completion of the wash down sewer flows will be minimized. There will be no major process flows in the existing 15" or 18". A small quantity of water will be flowing from the treatment facilities during this period.

The existing flows in the 18° sewer from the treatment facilities are: 450 gpm; temp of 20° to 30° C and a ph 1 to 1.5.

The suggested material of construction for the flume through manhole 1-DD for this stream is Fibercast CL2030 piping.

6. Miscellaneous

- a. The pipe from manhole 2-PF interferes with the 42° pipe coming out of manhole 2-CC. Two options are being reviewed:
 - The sewer pipe from manhole 2-FF may have to flow to manhole 2-DD.
 - 2) Manhole 2-FF could be eliminated and pipe changes on existing manholes may be made.

<u>Lichtenheld</u> and <u>Nelson</u> to look at the existing manholes to determine their condition and suitability for this work.

- Construction will work this Saturday and will extract or drive piling. <u>Carrico</u> to handle permits.
- c. Procedures for tie-ins of each manhole have been discussed to manhole 2-AA. <u>Martini</u> and <u>Petterson</u> to publish these procedures for review and comment.
- d. Water is leaking into the portion of the trench that has been excavated east of manhole 2-CC. Petterson to resolve. (This is not a dewatering problem.)

MGK 4084575

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e. Discussions were held pertaining to interpreting the Monsanto specifications for manhole wall and encasement tolerances relating to bulges and depressions. Alberici and Monsanto currently disagree. The discussion centered around manhole 1-DD. Resolution was delayed until the surfaces of manhole 1-EE can be checked after the water test is complete.

The next progress meeting will be held on Thursday, September 26 at 9:30 a.m. at the construction trailers. All Monsanto personnel are to meet prior to this meeting at 9 a.m.

Gordon Grundmann

2178Z

WGK 4084576

INAME-LOCATION-PHONE. R. L. Nelson / HCK DATE

September 20, 1985

L. Bumbicks K. Kennedy

SUBJECT

ACL WASTE STREAM

R. Lauer

MEFERENCE

G. Grundmann - CS6G

B. Steketee

TO

Ralph Martini/Ken Peterson

The present scheduled "maintenance turneround" for Dept. 251 (ACL) is to begin 11/12/85. The minimum outage presently scheduled is 12 days.

During the first day or day and a half, the department will be in a "washdown" phase. Upon completion of the washdown, sewer flows will be minimized. There will be no major process flows in the existing 15" or 18". A small quantity of water will be flowing from the treatment facilities during this period.

The existing flows in the 18" sever from the treatment facilities are: 450 gpm; temperature of 20° to 30°C and a ph of 1 to 1.5.

The suggested material of construction for the flume thru M.H. 1-DD for this stream is Fibercast CL 2030 piping.

R. L. Nelson

đa,

HGK 4084577

Lever Mut Liscussed spices and differences between Allevie and Morconte Carricco W Koester Picho of cours

The hope cours

1-88 finish exact 1-14-bitton buck dru.

1-CC funct 15 tas - La lecomp Oct 1 2. weeks dart mother monkole Calulai 1-EE to 2-AR no leaks (20 joints). Set to test a-BB to a.CC Fiso test Fill 1-EE for water tast Housed base for acc and the (lateral) Long encos 1-EE to J-MP Sarab Rows to be set this afternoon. 1-95- 101 excasement words 9/45 turned file Monday

WGK 4084578

Shundman A Magturi H Olichterheld Drie Rotz ALBERICI W. Koester ALBERICI

Markolo Chacussion:

Allenici concern timo and morrey being sport in markolas to get them the way thromsants wants them.

Speific - we are being spaintications

HEK 4084579

CC. L. Bumbicka

September 16, 1985

CC. L. Bumbicka

K. Lichtenheld - CS6G

R. Hartini

R. Nelson

REFERENCE:

TO: P. Hoemann

CC. L. Bumbicka

K. Lichtenheld - CS6G

R. Hartini

R. Nelson

Shipley

B. Steketee

Sample building pad is poured and building is available — to be located at west fence. $\dot{}$

Clean out installation on L-34 and line is encased.

Brick work in flume is complete in IAA.

Furan membrane installation half done in 188.

Manhole 1CC has been primed.

Contaminated drum and soil cleaned up at 1GG.

Retest of one section with three joints will be done today between IEE and IAA.

Base slab poured between 2AA and 2BB.

Still making joints between 2BB and 2CC.

Base for manhole 2CC poured.

Culvert on job site for Department 245 track - to be installed during turnaround.

Twenty-inch VCP on site for T-3 jumper.

T. Carrico Operations Foresan

Fam Carrico

skg

NGK 4084580

IN-1 120

DATE September 15, 1985

September 15, 1985

L. Bumbicka
G. Grundmann - CS6G

SUBJECT

TIE-IN OF 15" SEWER AT ACL
B. Steketee
R. Martini
ARFERNENCE
J. Boehm

TO: K. Kennedy/R. Lauer

During excavation for the installation of M.H. 1-GG (located in the South courtyard of ACL) it was found that the existing 15" Sewer from ACL was leaking and is in a deteriorated condition. A portion of the existing 15" sewer was removed and temporary piping installed to allow construction of the new manhole (1-GG).

Beginning September 16, 1985, we will be removing the temporary piping and installing the permanent tie-in of this line to the new manhole (1-GG). A temporary flume will be installed through manhole 1-GG to handle "care of flow" until the start-up of the South Trunk Sewer.

As previously discussed the following procedure is to be used for this tie-in:

Remove encasement from existing 15" line.

Partially backfill and install concrete base pad.

Install bypass pump and plug existing 15" line.

Run water into existing 15" to dilute the process stream.

Remove temporary piping and install new 15" VCP with acid joints.

Cure joints (3-4 days).

Install flume through new manhole, remove plug and bypass pumps.

Return line to service.

The following contingency plan will be in effect:

Bypass pumping will be performed utilizing an electric pump. Pumping will be continuously monitored (24 hrs./day). A spare pump will be at the site.

Work will begin on Monday, September 16, and proceed on a spot overtime basis so work can be expediently completed. Bypass pumping is scheduled to begin Thursday, September 19, and continue until Monday, September 23.

The project (CED 3808) has repaired a small portion (only enough to facilitate tie-in) of the existing 15" line. Due to conditions found during the excavation, a further investigation, by the Zone TSD group, of this line is warranted.

WGK 4084581

R. L. Nelson

ab

MONSA: 7

From:	Gordon A. Grundmann CS6G	Corporate Engineering	(4-6112)
Date:	September 12, 1985	cc: D.R. Bowers	CS6G
Subj:	Groundwater Disposal Cost	L.C. Kreh K.W. Lichtenheld	F2EG CS6G
Re:	CEA 3808	R.C. Martini F.A. Mayse	1740 CS6G
	Main South Trunk Sewer	B.W. Steketee	1740
TO:	L.V. Bumbicka 1740 J.J. McQueeny 1740		
	J.J. McQueeny 1740 R.L. Nelson 1740		

This memo addresses the problem of additional costs incurred starting next July 1, 1986 when the new Regional Treatment Plant revises its sewer treatment costs. This is a prime concern for the new Main South Trunk Sewer project due to the large quantities of water sent to the treatment plant from the dewatering wells.

Steps have been taken to minimize the flow of water that is currently being sent to the existing treatment plant. They are as follows:

- 1. The ground water level is monitored daily.
- Based on the current ground water level results (determined in \$1), we can determine how many dewatering pumps need to be run. Presently, we are only running 2 pumps.
- 3. In addition, the discharge piping system on the dewatering pumps was designed with a valve so that the flow from any individual pump could be throttled down to a lower discharge rate. This allows us to run 4 or 5 pumps at a reduced rate so that a large portion of the trench can be dewatered while minimizing the water sent to the treatment plant.
- 4. The dewatering pumps are also furnished with automatic controls. The pumps only run when a high water level switch is triggered and shut off at low level. Thus, if we only have 2 pumps running, these pumps will not run when low water levels are present.
- 5. Plans are in progress to possibly install instrumentation to measure the actual GPM flow from these pumps.

The treatment plant charges which will be incurred next year can only be roughly estimated since the weather and ground water level cannot be predicted.

Groundwater Disposal Cost - CEA 3808 September 11, 1985 Page 2

While a range of costs could be anticipated, the probable minimum cost is estimated as follows.

- 2 pumps running 2/3 of the time
- Maximum discharge rate from each pump is 1100 gpm.
- Running for a 5 month period
- Estimated sewer treatment cost increase of \$1.87/1000 gallons

This would result in a cost of approximately \$600K.

The cost could, of course, be higher based on a variety of variables, such as:

- Number of pumps operating
- Percent of time pumps operate
- Rate of flow.of pumps
- Number of days of operation
- Weather and ground water levels during the work period
- Actual cost charged by the treatment plant

A number of items either have been done or are being reviewed which will effectively minimize the amount of ground water pumped to the treatment plant next year after July 1.

- 1. Foundations near dept. 245 are currently being removed to avoid delays when trench excavation reaches this area.
- 2. Soil borings have been taken to the end of the sewer path to try to locate any contaminated areas. If found, these areas could be cleaned up ahead of time, thus avoiding sewer installation delays.
- A culvert pipe is being installed under track 4 at dept. 245. This keeps the track open while avoiding sewer installation delays.
- 4. The possibility of pumping the dewatering pump discharge back into wells no longer being used is being reviewed.
- 5. Costs have been obtained for bringing additional piling on site to prevent delays. This may not be necessary.
- 6. Temporary trench crossings are planned across the trenches at dept. 245. This allows the sewer work to continue while also allowing fork truck movement across the trenches.

Groundwater Disposal Cost - CEA 3808
-- September 11, 1985
Page 3

Other construction options are being reviewed that would reduce the completion of this project and minimize water treatment costs.

- 1. Selective spot overtime to keep the project moving smoothly.
- Four 10-hour days could be worked. This does not result in additional costs, but gives you Friday as a make-up day in case it rains, etc.
- 3. A structured overtime program can be initiated. The craftsmen could work six 8-hour days or five 10-hour days. This system is usually not as efficient as the standard five 8-hour days, but would serve to increase the schedule.

Cost would be approximately \$15K/month. Probably save 3-4 days a month.

4. Another method would be four 10-hour days with rolling crews. There would be two crews; each crew would work four days and then be off for four days. This would allow installation work to proceed seven days a week.

This system will require a more in-depth study by the contractor. Some blue sky estimating would suggest that this method could cost \$150-200K for a four month period.

Due to inefficiencies, we could perhaps expect to decrease the schedule by up to three months.

There are a number of questions which would need to be addressed with this method, such as quality, getting agreement with the craftsmen to do this, etc.

Currently, Alberici is reviewing the above options and will furnish us with more detailed information prior to October 1.

Additional information will be furnished as it becomes available.

Gordon Grundmann

2131C

WGK 4084584

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MONSANTO

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From:	G.A. Grundmann	CS6G	Corr	orate	Engineering	(4-6112)
Date:	September 12, 19	85	cc:	D.R.	Bowers	CS6G
	_			L.V.	Bumbicka	1740 ₺
Subj:	Project Progress	Meetings		R.M.	Calles	CS6G
•				M.A.	Coco	Alberici
				J.	Colling	1740
Re:	CEA 3808 - Main	South Trunk		R.J.		CS6G
	••••				Hartman	CS6G
TO:	J.J. Beckerle	Alberici			Hoemann	1740
	W. Bodine	Alberici		L.C.		F2ED
	T.N. Carrico	1740*		F.A.		CS6G
	W.C. Koester	Alberici*			Steketee	1740*
	K.W. Lichtenheld			R.L.	-	CS6G
	C.J. Lotz	Alberici*				
	R.L. Nelson	1740*		*Pres	ent at meeting	
	K.W. Petterson	1740*			t time	
	R.C. Martini	1740*				
	O.N. Shipley	1740				,
	R.B. Knoll	Fleischer	Seeger**	•		•

Following are minutes of the meeting held at the CED construction trailers on 9/12/85 at 9:30 a.m.

1. Construction Progress

- a. Repairs to the two 42° exotherm joints are complete. Hydro test planned Monday. If this test is successful, the water test can be made on manhole 1-EE.
- b. 42" pipe has been laid east of manhole 2-BB almost to 2-CC. Joints have been made on a number of pipes and a test is targeted for 10/18 or 10/19.
- c. The concrete base slab has been poured between manholes 2-AA and 2-BB.
- d. 42° pipe has been placed in the trench between manhole 2-AA and 2-BB.
- e. Additional 42° pipe encasement is being poured between manholes 1-EE and 2-AA. Backfill can occur next week.
- f. Removal of piling between manholes 1-EE and 2-AA will begin next week. This piling will be driven north of department 245 in preparation for the excavation and installation of the culvert pipe. Piling will also be driven from manholes 2-CC to 2-DD.

1

- g. Epoxy work will be completed on manhole 1-EE today. Internal surface work on this manhole will also be completed today.
- h. The base for manhole 2-CC is being formed and may be poured today.
- The 9' dia. culvert pipe is due 9/13 at site. The monorail is due 9/16.
- j. Steps are being taken to complete lateral L-34.

2. Internal Manhole Work

- a. Manhole 1-AA. Brickwork on the flume is almost complete. Approx. 10 working days will be required to complete the remaining brickwork.
- b. Manhole 1-BB. Furan membrane installation work is ready to proceed.
- c. Manhole 1-CC. Application of the asphaltic membrane is ready to begin.
- d. No smoking is allowed in the manholes or surrounding areas. The men need to continue to go to the break shacks to smoke.
- e. Fleischer Seeger is to review and present ways that would expedite their work.

3. Contaminated Soil

Monsanto is working closely with the Laidlaw people to resolve and obtain state permits so that we can remove the dirt.

4. Jumpers

- a. The difference in elevation of 2 feet between the ends of jumper T-3 may be a problem. Excavations will be made to see if the existing box can be tied into the west side of box 33-C at a lower elevation. The elevation of the 8° pipe that conflicts with the jumper run will also be checked. This will allow resolution of this jumper installation.
- b. No fittings have been ordered for any special runs, such as running the 21° pipe under the 8° pipe. These will be ordered, if necessary, when the details of the run have been finalized.

NGK 4084586

5. Department 245

- a. The foundations between manholes 2-DD and 3-AA have been removed. Alberici will remove the top portion of the piling which remains to a distance of 1' to 2' below the base slab.
- b. Groundwater levels will be monitored at the culvert location north of dept. 245. A dewatering pump will be installed, if required. <u>Carrico</u>, <u>Martini</u> and <u>Nelson</u>.
- c. As a reminder, the track north of dept. 245 can be removed Tuesday, Oct. 1 unless a car can't be switched over the previous weekend. Then the track will not be able to be removed until 10/2/85.

6. ACL Shutdown

- a. A portion of the BI slab has been set aside for assembly of the precast section that will be installed between manhole l-JJ to l-D-l during the ACL shutdown.
- b. Manhole 1-DD to be inspected by Petterson and Nelson.
- c. The area by manhole 1-GG, that was held up due to the discovery of a drum, was released back to <u>Alberici</u> on 9/10.

7. Miscellaneous

- a. The 3 pipes with blemishes that were repaired by furan patching are acceptable for use. This procedure was approved by Nelson and Lichtenheld at Dickey's plant.
- b. <u>Lichtenheld</u> advised <u>Alberici</u> that the sample house should be set with the door to the north (180° from what is shown on drawing).
- c. A repair procedure is coming from Dickey on a suggested way to repair the cracked bell on L-35 lateral. It will be reviewed by <u>Lichtenheld</u> and <u>Nelson</u>.
- d. Cleanup of the construction area has been progressing. Work will continue with the intent that most cleanup work will be done by 9/25.
- e. <u>Lichtenheld</u> to reissue drawing C7 showing the relocation of manhole 2-FF.

MGK 4084587

- f. Procedures are currently being written for the care of flow plans at the various manholes. Lichtenheld, Martini, Shipley, Petterson and Nelson.
- g. Replacement or repair of existing sewers that are in bad shape is not within the scope of this project.

The next progress meeting will be held on Thursday, September 19 at 9:30 a.m. at the construction trailers. All Mensanto personnel are to meet prior to this meeting at 9 a.m.

Gordon Grundmann

2178Z

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Moncanto

Monsanto Company Corporate Engineering Department Sauget, Illinois 62201

> September 10.1985 Letter #6 MC/JSA-6

Alberici W.C. Koester

Subject: Monsanto CEA 3808

Acid Proof Pipe Joint Material

Main South Trunk Sewer

Ref

: Letter WCK to G.G. dated July 1,1985

Monsanto has reviewed your letter of July 1,1985 concerning additional labor cost for the revised joint material for the 42" VC pipe and offer the following comments.

Our review of the labor to install the currently specified joint using a two pass method indicates the labor effort to be approximately the same as the joint originally specified and included in the bid package. This conclusion was arrived at independently by both our Estimator and Construction Engineers experienced in both systems. Monsanto agrees to additional cost when installing the currently specified joint using the three pass system.

Experience with joint leaks at the time of your letter indicated a 32% failure rate which included cold weather construction and start up on the project. Above normal leakage rate would be expected during this period. Currently 73 joints have completed and tested with a first test leak experienced on 15 of the joints. This equals a rate of 21%.

Monsanto's experience with the originally specified joint indicates a failure rate of 20% to 25% to be expected under test conditions that allow a limited amount of leakage. A far higher failure rate should have been anticipated with the "No Leak" specification on this project. Experience to date has thus shown that the revised joint specification has provided a far superior joint and has resulted in less leak repair cost than would have been reasonably anticipated with the joint originally specified. Monsanto therefore declines additional cost related to joint leakage on the project.

> Bruce W. Steketee Site Construction Manager

BWS/acg

CC:

Ralph Martini Gordon Grundmann

Lee Kreh

bcc:

L. Bumbicka

D. Nelson

K. Lichtenheld

4084589

Long Benlika

F. Mayse feet Die

was sign if board on Frie

pemps operation in me are

new operating two. year

need & yet with him

and needer 46 9/11

feff."

The \$1.50 sestimate was 20 "Low" side of our narge of cost for groundwater. We wastend the need to minimy see much as greated the source pumper in 1886 to beep the sewer got on schedul.

What dring two things to help accompless this."

1) We are throthing to a minimum the amount of water from the pumpe that need to run.

2) We are meeting to pump declary
to help determine the exact amount maded
to be fungered us weter take herb.
Also we are timing my affects to
expect the fill to complete as much well
as famille hepro May 1, 1996.

WGK 4084591

CONT.

Will these Josether Steps, I feel we would be accusate in saying the \$1.54 is to the Rightside.

Sarry

we still weed to his the myry cost for next ipon hourset. Per Mc Queeny CED is still studging the proplem but has no reduction of dewatering flow in hand suggest we proceed with current number. If CED comes up with a viable option we can either adjust the budget later or uge it as a budget upside (These latter items look scarce for 1986) CCMC Queeny,

PRELIM. C-PY

MONSANTO

From: Gordon A. Grundmann CS6G Corporate Engineering (4-6112)

Date: September 11, 1985

cc: K.W. Lichtenheld

R.C. Martini F.A. Mayse

1740

Subj: Groundwater Disposal Cost

B.W. Steketee

1740

CEA 3808 Re:

Main South Trunk Sewer

TO: L.V. Bumbicka 1740

R.L. Nelson

1740

This memo addresses the problem of additional costs incurred starting next May 1, 1986 when the new Regional Treatment Plant revises its sewer treatment costs. This is a prime concern for the new Main South Trunk Sewer project due to the large quantities of water sent to the treatment plant from the dewatering wells.

Steps have been taken to minimize the flow of water that is currently being sent to the existing treatment plant. They are as follows:

- 1. The ground water level is monitored daily.
- 2. Based on the current ground water level results (determined in \$1), we can determine how many dewatering pumps need to be run. Presently, we are only running 2 pumps.
- 3. In addition, the discharge piping system on the dewatering pumps was designed with a valve so that the flow from any individual pump could be throttled down to a lower discharge rate. This allows us to run 4 or 5 pumps at a reduced rate so that a large portion of the trench can be dewatered while minimizing the water sent to the treatment plant.
- 4. The dewatering pumps are also furnished with automatic controls. The pumps only run when a high water level switch is triggered and shut off at low level. Thus, if we only have 2 pumps running, these pumps will not run when low water levels are present.
- 5. Plans are in progress to possibly install instrumentation to measure the actual CPM flow from these pumps.

The treatment plant charges which will be incurred next year can only be roughly estimated since the weather and ground water level cannot be predicted.

Groundwater Disposal Cost - CEA 3808 September 11, 1985 Page 2

While a range of costs could be anticipated, the probable minimum cost could be as follows.

- 2 pumps running 2/3 of the time
- Maximum discharge rate from each pump is 1100 gpm.
- Running for a 5 month period
- Estimated sewer treatment cost increase of \$1.87/1000 gallons

Cost would be approximately \$600K.

The cost could, of course, be higher based on a variety of variables:

- Number of pumps operating
- Percent of time pumps operate
- Rate of flow of pumps

....

- Number of days of operation
- Weather and ground water levels during the work period
- Actual cost charged by the treatment plant

A number of items either have been done or are being reviewed which will effectively minimize the amount of ground water pumped to the treatment plant next year after May 1.

- 1. Foundations near dept. 245 are currently being removed to avoid delays when trench excavation reaches this area.
- Soil borings have been taken to the end of the sewer path to try to locate any contaminated areas. If found, these areas could be cleaned up ahead of time, thus avoiding sewer installation delays.
- A culvert pipe is being installed under track 4 at dept. 245. This keeps the track open while avoiding sewer installation delays.
- 4. The possibility of pumping the dewatering pump discharge back into wells no longer being used is being reviewed.
- 5. Costs have been obtained for bringing additional piling on site to prevent delays. This may not be necessary.
- 6. A way to reduce the completion work on this sewer would be to relax specifications. This option has not been viable to date.
- 7. Temporary trench crossings are planned across the trenches at dept. 245. This allows the sewer work to continue while also allowing fork truck movement across the trenches.

MCK 4084597

Groundwater Disposal Cost - CEA 3808 September 11, 1985 Page 3

Other construction options are being reviewed that would reduce the completion of this project and minimize water treatment costs.

- Selective spot overtime can pay dividends to keep the project moving.
- Four 10-hour days could be worked. This does not result in additional costs, but gives you Friday as a make-up day in case it rains, etc.
- 3. A structured overtime program can be initiated. The craftsmen could work six 8-hour days or five 10-hour days. This system is usually not as efficient as the standard five 8-hour days, but would serve to increase the schedule.

Cost would be approximately 10K/month. Probably save 3-4 days a month.

4. Another method would be four 10-hour days with rolling crews. There would be two crews; each crew would work four days and then be off for four days. This would allow installation work to proceed seven days a week.

This system will require a more in-depth study by the contractor. Some blue sky estimating would suggest that this method could cost \$150-200K for a four month period.

Due to inefficiencies, we could perhaps expect to decrease the schedule by up to three months.

There are a number of questions which would need to be addressed with this method, such as quality, getting agreement with the craftsmen to do this, etc.

Additional information will be furnished as it becomes available.

Gordon Grundmann

2131C

HGK 4084598

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(MAME-LOCATION-PHONE) T. Carrico - WGK - Ext. 2095

September 10, 1985

cc. L. Bumbicka

K. Lichtenheld - CS6G

Status Report on CEA 3808

R. Martini

R. Nelson K. Petterson

O. Shipley

TO

P. Hoemann

B. Steketee

Brick work to begin in 1AA today.

Manhole 1BB having new asphaltic membrane applied.

Manhole ICC spot repairs okay - ready for reprime.

Work stopped at 1GG. Two drums uncovered north of site. To be analyzed.

All 42 inch joints repaired between IEE and 2AA. To retest today.

All 42 inch that could be encased between 1EE and 2AA has been approximately 105 feet. .

Sewer box 2F failed badly enough on 8/23 weekend that east end of excavation had 3 feet of H2O in it on 8/26 - spent day cleaning up site.

#2 jumper on line between 2V and 2-0-4 to facilitate clean up.

24 inch sewer plugged in and out of 2F 8/30.

Fruco started busting concrete out between 2DD and 3AA.

T. Carrico

Operation Foreman

Ext. 2095

/ъь

HGK 4084599

DATE	:	September 9, 1985	cc. L. Bumbicka K. Lichtenheld - CS6G
SUBJECT		Status Report on CEA 3808	R. Martini
	•		R. Nelson
REFERENCE	:		K. Feterson
		P. Hoemann	O. Shipley B. Steketee
то	:	r. noemenn	D. Steatte
		Brick work in progress in 1AA.	
		Membrane application in progress	in 1BB.
		Steps to clean up contaminants at this week.	site north of 1GG should be undertaken
		Compaction and backfill in progre	ss south of ACL treatment plant.
		Retest of joints between LEE and the scheduled for late this week.	2AA resulted in two joints needing to
		Some additional encasement of good	d joints in this section.
		Making joints between 2BB and 2CC	•
		Additional plug put in at 2B2 on a work can proceed between 2AA and	9/5. This has dried up excavation so 288.
		Twenty-four inch encased sewer repoured to 2CC.	moved north of 2G, base slab can not be
		Concrete removal between 2DD and :	3AA complete by Fruco three weeks ahead

T. Carrico
Operations Foreman

skg

WGK 4084600

J. J. McQueeny - WGK

September 9, 1985

cc. J. Molloy

Dewatering South Trunk Sewer

W. Smull

L. Bumbicka G. Grundmann - CS6G

REFERENCE

TO

J. O. Bright - CS6G

Confirming our conversation of a few days ago, the dewatering charges for the south trunk sewer will be \$1.5M.

With startup of Regional Treatment in 1986 our costs increase significantly after July 1. The project team plans to minimize dewatering costs with the existing pumping system.

However, significant savings can be realized by finishing the project closer to Regional startup. 'Please investigate alternate ways to reduce costs, i.e. 2 shift operation, increased crew size, open more trench in '85 etc.

We appreciate responding to this issue as a priority.

JJM/kbp

MGK 4084601

MONSANTO

From:	G.A. Grundmann	CS6G	Cor	porate Engineering	(4-6112)
Date:	September 6, 1985	j	cc:	D.R. Bowers	CS6G
				L.V. Bumbicka	1740
Subj:	Project Procress	Meetings		R.M. Calles	CS6G
-				M.A. Coco	Alberici
				J. Colling	1740
Re:	CEA 3808 - Main S	South Trunk	Sewer	R.J. Geile	CS6G
				E.R. Hartman	CS6G
TO:	J.J. Beckerle	Alberici		P.R. Hoemann	1740
	W. Bodine	Alberici		L.C. Kreh	F2ED
	T.N. Carrico	1740**		F.A. Mayse	CS6G
	W.C. Koester	Alberici*		B.W. Steketee	1740*
	K.W. Lichtenheld	CS6G		R.L. Wiese	CS6G
	C.J. Lotz	Alberici*			
	R.L. Nelson	1740*		*Present at meeting	Ī
	K.W. Petterson	1740*		**Part time	•
	R.C. Martini	1740			
	O.N. Shipley	1740*			
	R. Schlereth	Fleischer	Seeger		

Following are minutes of the meeting held at the CED construction trailers on 9/5/85 at 9:30 a.m.

1. Construction Progress

- a. Epoxy mortar being installed on manhole 1-EE.
- b. Patching pinholes on interior wall in manhole 1-EE.
- c. The 42" VCP pipe east of manhole 1-EE was retested. Two of the exotherm joints that were repaired leaked on this test. They did not leak on the first test.
- d. Nine new 42" VCP joints just west of manhole 2-AA passed the hydro test.
- e. The pipe concrete base cannot be poured between manholes 2-AA and 2-BB until the leaks to the trench can be stopped.
- f. The concrete pipe base has been poured from manhole 2-BB to 2-CC.
- g. Laying pipe in trench east of manhole 2-BB.
- h. The sample house pad is being poured.

2. Contaminated Soil

a. Still waiting for state permits to haul off stockpiled dirt. Nelson.

HEK +084605

b. Procedure revisions in progress. Martini & Nelson.

3. Jumpers

- a. The 16" water line has been located.
- b. Petterson to give T-3 routing to Alberici 9/5/85.
- c. The grade elevations on the drawings are approximately 1' higher on this jumper. <u>Lichtenheld</u> to approve elevation change.
- d. T-3 interferes with an existing 8" pipe. It may be easier to move the 8" pipe. Martini and Petterson to review.
- e. T-3 construction schedule handed out by Alberici.

4. Internal Manhole Work

- a. Manhole 1-AA. Started on acid brick work in flume area. A plant electrical outage last Tuesday prevented work that day.
- b. Manhole 1-BB. Currently applying final layer of asphalt.
- c. Manhole 1-CC. Depressions filled.
- d. Application of the asphaltic membrane per the procedure is working fine.

5. Dept. 245

- a. The tunnel piling will be driven around 9-15. (The piling will be removed from 1-EE to 1-AA.)
- b. Work is in progress removing the foundations from manhole 2-DD to 3-AA.

6. ACL Shutdown

- a. Nelson will try to obtain use of a part of the BI slab for building the precast section to go between manholes 1-JJ and 1-D-1.
- b. A procedure is to be developed for pumping manhole 1-D-1 while the precast section is being installed from 1-JJ to 1-D-1 during the ACL shutdown.

Also will need to pump at manhole 1-GG during the same period. <u>Lichtenheld</u>, <u>Martini</u>, <u>Petterson</u>, <u>Nelson</u>.

WEK 4084603

> c. Nelson to give flows that will be expected from ACL during this shutdown.

7. Miscellaneous

- a. Nelson and Petterson to inspect the manhole 1-DD interior surfaces.
- b. Nelson, Petterson, Shipley & Lichtenheld to determine procedure to get brickwork around the encasement in manhole 1-DD.
- c. <u>Nelson & Lichtenheld</u> to inspect blemish repairs on 42* VCP for acceptability. (3 pieces)
- d. <u>Nelson</u> advised of leaking fire water line just west of village box.
- e. Alberici working on site cleanup.
- f. Alberici reviewing ways to improve the schedule.
- g. Martini and Lichtenheld to write procedures for care of flow work at the various manhole tie-ins.

The next progress meeting will be held on Thursday, September 12 at 9:30 a.m. at the construction trailers. All Mansanto personnel are to meet prior to this meeting at 9 a.m.

Gordon Grundmann

2178Z

MEK 4084604

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MONSANTO

From:	G.A. Grundmann	CS6G	Cor	porate	<u>Engineering</u>	(4-6112)
Date:	September 5, 1985		cc:		Bowers	CS6G
Subj:	Project Coordination Meeting CEA 3808 - Main South Trunk Sewer			R.J. Ge L.C. Kr		1740 CS6G F2ED 1740* CS6G
Re:					Steketee	
TO:	T.N. Carrico K.W. Lichtenheld	1740** CS6G			Ferrario sent at meetin	CS6G
	R.C. Martini R.L. Nelson K.W. Petterson	1740 1740* 1740*		r.c.	sent at meetin	4
	O.N. Shipley	1740*				

Following are minutes of the meeting held at the CED construction trailers on 9/5/85 at 9:00 a.m.

1. Dewatering Pump Discharge

A number of steps have been taken to minimize the amount of water being sent to the treatment plant.

a. The ground water level is being monitored daily. Based on this level, the appropriate number of pumps are being run to maintain an adequate ground water level.

Currently, only 2 pumps are being run to achieve satisfactory levels.

b. Steps are being taken to measure the actual GPM flow from these pumps. Valves were installed on the discharge line to throttle the flow when appropriate.

In addition, various items have been identified as ways to keep the sewer work moving while also keeping plant manufacturing running, etc. An improved schedule would, of course, help to minimize costs for sending water to the regional treatment plant after next May 1, 1986.

- a. Foundations near department 245 are currently being removed to avoid delays when trench excavation reaches this area.
- b. Soil borings have been taken to the end of the sewer path to try to locate ahead of time any contamination areas. If found, these areas could be cleaned up ahead of time, thus avoiding sewer installation delays.
- c. A culvert pipe is being installed under track 4 at dept. 245. This keeps the track open and avoids sewer installation delays.
- d. The possibility of pumping the dewatering pump discharge back into wells no longer being used is being reviewed. Nelson.

WEK 4084605

T.N. Carrico, et al September 5, 1985 Page 2

- e. Costs have been obtained for bringing additional piling on site to prevent delays. This may not be necessary.
- f. A way to reduce the completion work on this sewer would be to relax specifications. This option has not been viable to date.
- g. Temporary trench crossings are planned across the trenches at Dept. 245. This allows the sewer work to continue while also allowing fork truck movement across the trenches.
- h. Alberici is reviewing options for improving the schedule.
- A review of the projected pumping rates after May 1, 1986, is in progress.

2. Contaminated Dirt

Nelson to work with Laidlaw personnel to review our dirt control procedures the week of 9/9. This may help to get some of the dirt removed.

3. Contaminated Drum

The drum found near manhole 1-GG does not contain any contaminated materials. The drum will be removed and the area will shortly be turned back to Alberici.

4. Laterel 35

Ways to repair the cracked bell on the lateral 35 are being reviewed. Dickey Pipe is forwarding a suggestion that they use in their shop.

This lateral primarily is subjected to ground water runoff and sewer fumes. Occassionally, there is a spill on the dock which occurs. Nelson to pursue.

Gordon Grundmann

1124C

÷.

WEK 4084606

CEM. E. Nelson

Subjust: CEA 3808 - House keeping

" Ref: 1985 Gep. Housekeeping Inspection

TO: R. MARTINI

CC: L. BUMBILKA
B. STEKE TEE
G. GRUNDMAN
K. PETTERSON
B. WILLIAMS

HOUSEKEEPING PUNCH LIST OF 8/29/85

Monhole 1-FF, LOTERDLS L-34, L-35 and Surrounding Deen

pick-up broken pcs. pipe, pcs. wood, asphalt chunks, pcs.

barricide tape, pcs. brick, pcs. VCP, rubber gloves, rags

buckets, unused rebar, wood handles, discarded brooms

tarps and steel strapping from excountion and adjacent

Separate rubble from excavated matrl. and stockpile in respective clean and rubble piles.

Gence area between L-34 and RT3 fence wash down existing asphalt paving

AREA BETWEEN RT 3 and Construction DREA FROM BLOG BBW To DIRT STORBGE DREA

pickup permood. scoop brick, plywood, cans, buckets, rags, gloves, pallets, onused rabar, tar, chunks of asphalticone, dismantled guil wire, paper, card board, paper cups, pes. barricade tape pes plastic

Gence DREA to organal contours wash down asphalt Re-establish the road from 5th Street to the dirt stq. area to its organal condition by grading the surface removing the dirt, wash down existing curbs & regraved the surface with crushed stone

HEK 4084607

DRED AROUND M. H 1-AA

pick-up rags, buckets, gloves, paper cups, scrap brick pcs. tarps, plastic, unused pallets, bags, paper, (pg 1 of 8)

chunks of asphalt, concrete, pes wood, paper cups Grade area around manhole Organize work mtrls into neat, orderly stacks.

AREA AROUND M.H. I-BB AND BETWEEN M.H'S I-AA & I-BB

pick-up chunks of asphalt, scrap wood pcs, pcs. barricade
tape, rags, gloves, pipe clamp, damage ladder, rope scraps,
pcs VCP, chunks of concrete, pcs pipe, rebar scraps, empty
bags, paper, paper cups, scraps of asphalt, plastic, tarps
pcs of scaffolding, buckets and cans.

REGERDE AREA Between I-AA & I-BB and South and
EBST OF I-BB. ORGBUIZE WORKING MTELS IN A NEXT FOSHION

Construction DREA BETWEEN BLOG BBW AND DIKE WALL & BIG MO
DEADE 5th Street from I Street to Rt 3. Remove Dirt
Wash Down Dephalt and webs.

DRADE DREA SOUTH OF 5th Street Between Dike and Street
Re-ESTABLISH Existing Grades, Remove Dirt, Wash Down
CURB and Re-Gravel Surface
Regrade Entrance To BBW South Dock and fill in low
spots in grave I fill on 42" Line.
Wash Dirt From Paving At Dock
Pick-up paper cups, rags, ps. broken VCP, pcs barricade

Pick-up paper cups, rags, pos. broken VCP, pos barricada tape, paper and chunks of asphalt.

Move doug Box to STORDAGE DREA, pick-up track pls, spices and track hardward

STORE Roll of Engr. fabric in designated stage area.

(cont.) (p12 of 8)

DRED DROUND M.H. I-CC AND TRACK 8C NORTH

pick-up paper cups, boxes, buckets, pes brick, conc. bricks

pes. wood, ppe, bes barricade tape, rags, gloves, clean

track by removing pes, wood paper, paper cups, rags

gloves and to pes. of track hardware.

DEGONIEE WORKING MATERIALS IN A NEXT FOSHION

DRED BETWEEN E. DIKE OF BIG MO AND TRACK &

REGRADE RODD AND REGRAVEL.

Move Conc Forms sup Form Accessories (whalers, tie-rods etc.) to designated stong. area.

Move Unused trench covers to designated storage area.

Pick-up steel beams, steel plate and move to designated stg. area

Pick-up pes. brick, pes. wood, paper, rags, tin foil and card board boxes.

Pick-up pes scrop wood, rags, paper, paper cops, gloves, plastic, pes

rebar from between rails on track 8.

Move guard rail, postsy signs to sty. area. WER 4084609

ALBERICI OFFICE COMPLEX AND AREA BETWEEN TRKS. 88 48

- 1) In the yard area directly East of TRK 8B pick-up sceeps of wood, pipe, steel, bricks, paper, paper cups cable, unused pallets, pcs. of pallets, gloves, steel siding scraps bags, tarps, steel plate, pcs. pipe, steel bands Combine usable materials and organize into neat stacks Grade yard area and drive to the northere-gravel.
- 2) Grade access road to dirt storage area. Clean dirt & rock from flange-way at rails.

 (pq 3 of 8)

2) AT Alberici's trailer (office) remove flammable and combustible material (wood paper plastic, etc) from under trailer.

Store usable material in designated stg. areas in a neat fashim.

Pick-up rags, paper, card board boxes, paper cups, pcs. sceap wood, pos. barricade tape, fiber pack can, damage fuel can, apples, pcs. lemon, rollen apple, pcs. pipe

4) Personnel bldgs - pickup paper, paper cups, rags, pcs. wood,
pcs. pipe, rugs, buckets, pcs. barricade tape, pcs pipe, unusad
pallets, sm. pcs steel & plate, fan cover, store fan, discarded
caulk tubes, snuff boxes, pipe insulation, pipe insul. covering,
pcs brick, gloves, rubber hoses, pick-up scattered tools
and store arrange bookhoe buckets (put matogether in one
place in orderly manner). Store gas cy linders properly
(All cylinders must be chained) in storage area

5) Tool storage box in yard area in front of trailers
store usable tools scattered through out trailer-bldg
complex, discard broken wheel barrow or store properly,
pick bags, plastic, pcs. wood, cans and buckets.

WGK 4084610

ACL Courtyard AREA, 5th STREET AND COOLING TOWER

pick up cable, rags, brick, pcs. wood, gloves, paper, paper cups,
siding, pallets, kroil can, chunks conc, chunks asphalt & cans.

Remove rubble from excavated mtrl and stockpile in
respective areas. Wash down conc. & asphalt paved areas

Regrade chat area at 42" line and fill low spots.

Grade 5th Street removing all extraneous (pg 4.18)

(cont)

dirt. Wash down asphalt paving and curbs from "I" street to track 8F.

Grade area South of street remove all dirt and re-chat. Pick-up paper, paper cups rags pes brick unused pallets, sheet steel, form ties, brackets, conc. forms, unused rebar, rebar scraps, hoses, gloves, dust masks, scaffolding, buckets, cans and pes barricade tape in the area of the cooling tower and ERI shed.

WGK 4084611

TROCKS 8F & 8E AND TEX 8 Manhole 1-EE and LATERAL L-46
pick-up paper, gloves, paper cups, pcs scrap wood, pcs concrete,
chunks of asphalt, hoses, dust masks, pcs barricade tape
scrap re-bar, buckets, cans, tarps, scaffolding, conc. forms,
form accessories, clean flange-way on tracks a haul road
crossing, clean metal crossing at 5th street by removing
paper, paper cups, gloves, rags pcs wood from opening
between crossing and rail. Repair / replace damaged
grating cover on existing M.H., pick-up and store crane
steel jigs, pick-up scrap pcs of KP pipe, steel beams & plate
Grade area between lateral L-46 and trk. 8 removing
excess dirt. Rick-up pcs. rope, plywood scraps. Store unused
trench covers in designated storage area.

Seperate rubble from dirt and move to respective storage piles. Clean sewer inlet grate by removing paper, pcs. cood, paper cups and gloves. Organize tools and other in tool structure, pick-up paper, rags, cups, pcs. asphalt around tool structure.

(cont)

pq 5 of 8

BLOG BBZ (Starroom) South Access/YDED AREA

(BETWEEN Bldg & Const. and "H & G" Streets)

pick-up scrap pcs. wood, steel, wire, barricade tape,

paper, paper cups, rags, pallets, unused rebar, buckets

street signs, poets, crane olings, bolts, washer, arrange trk

mtrl (rails, hardware) from trk 8 in neat stacks.

Grade area removing all dirt in excess of dike " at

trench to respective piles. Wash paved areas duon.

DREA BETWEEN RIPTRK OFFICE and Excouption

pick-up scraps of wood, paper, unused rebar, rebar scraps barricade tape, per. sophalt, per. conc. pick-up atreet signs a poet and other. Pick-up metal from a accessories and stere in a trade area. Remove crane swivel from track 8 and stone. Organize working materials in an orderly fashion at carps. work area. Pick up per. unused exoffolding and stone. Pick-up steel jig at track 8 and stone. Grade area North of carp. work site, remove extraneous dirt. Wash down existing asphalt paving. Clean flange-ways on tracks 84 BF/E.

HGK 4084612

AREA BETWEEN STOREBOOM YORO DO EXCAVATION

pick-up per. wood, paper, paper cups, rags, buckets, cans

pcs. rope, barricade tape, steel straping, steel cables, hoses

churks of asphalt, cone., gloves, rain coats, ply wood, per cone

brick, VCP, per. rebar, unused rebar, steel beams

Pick-up and star in designated strage area, scallolding

ladders, trench coucus not in use

cont. (pg 6 of 8)

piping, forms, form accessories, guardrail+ post, fence poots hoses street signs, R.R. ties. Organize dism. R.R. rails in orderly fashion. Ack-up tools and store unused tools in tool storage structure. Grade temp. access road and re-chat. Grade both sides of excavation removing extraneous dirt. Seperate rubble from excavated mtrl piles and haul to respective storage piles. Wash dan existing asphalt.

AREA OF LATERAL L64 and EDT OF BLOG BBZ

pick-up rags, per barricade tape, wood, cans, buckets

chunks of asphalt, come., gloves, bogs, card board boxes, pipe,

pallets. Pick-up and store unused materials e.g. steel

beams, tools, trench covers. Separate rubble from excavated

mtrl pile and haul to respective storage areas. Grade area

at jumper TI and re-chart pick-up chunks of storage

asphalt. Wash down street from jumper TI to excavation

STORLGE DOED / LAYDOWN YARD

PICK-UP scraps of wood, steel, VCP pipe, pcs conc, paper, rags, gloves, paper cups, pcs. wood pallets, wire, scraps of rebar, cans, buckets, plywood, pcs pipe scraps Organize all wable material and stee in neat stacks. Grade area next to excavation removing extraneous dirt. Grade drive thru yard area filling in depressions w/ chat.

cont.

pg 7 - 88

DREA BETWEEN BLOG BT POD & EXCAVATION

pick-up scrops of wood, paper, paper sups per. barricade tape chunks of asphalt per conc. concrete curbing, glows rags, buckets. Grade temp drive and wash down existing cone pad at BI site. Grade area next to excavation removing extraneous dirt and haul to designated storage area. Wash down "F" Street at or near excavation. Repair R.R crossing at Tik #6 on 5th Street (Alberici crane damaged crossing.)

AREA West of Dept 245, East OF F" STREET

Femore existing stretch of fence (partially dism.)

pick-up conduit, rolls of fence, scraps of wood

wash rubble from excevation and move to star

area. Organize dism. R.R. rails and accessories in
a next fashion.

HGK 4084614

DRED OF JUMPER TZ

pick-up scraps of paper, paper cups, rags, gloves wood, plywood, pallet, barricade tape, asphalt scraps and residue. Wash dirt from existing asphalt paved strage areas.

The enclosed list will be updated periodically by R. Nelson and L. Bumbicha so as to maintain a neat, safe worksite.

Q. L. Vilan

(M848)

Monsanto

FROM

IMAME-LOCATION-PHONE: D Nelson / WCK

August 29, 1985

SUBJECT

REFERENCE

RESTRICTED AREA

cc. K. Storms A. Quick

L. Bumbicke B. Steketee

G. Grundmann

TO

- Ralph Martini/Ken Petterson

The following areas are off-limits to any and all outside contract personnel beginning at 10:00 A.M., August 28, 1985, until further notice:

"The excavated area surrounding Manhole 1-GG, the excavation along the existing 15" sewer North of Manhole 1-GG, the excavated area of Lateral L-43, and the excavated area North of the 42" sewer at Manhole 1-DD."

Please inform Alberici of this restricted area. There is to be no work performed in this area without the expressed approval of the M.R. (R. Nelson).

We are expediting our investigation of this area and will remove this restriction as quickly as fessible.

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4084615

IN 1120

Monsanto

Monsanto Company Corporate Engineering Department Sauget, Illinois 62201

August 28,1985

J.S. Alberici Construction Company 2150 Kienlen Avenue St. Louis, Missouri 63121

Attention: Mr. Christopher J. Lotz Subject : Monsanto Project 3808 South Trunk Sewer

JSA Job #8434

Reference: JSA Letter dated August 21,1985

Gentlemen:

It is agreed that we will accept the charges involved in the false attempt to water blast Manhole 1-88 because of Monsanto's inability to provide the required water supply on Wednesday, August 21,1985.

Charges for this work will be accumulated on CFO-2-25.

However, we are in complete disagreement that this incident will cause a delay and effect the complete of the project. This work is not on the critical path.

CC: G. Grundmann

B. Steketee

W. C. Koester

K. Lichtenheld

L. Kreh

L. Bumbicka D. Nelson

HGK 4084616

.

Munsanto

(MAME-LOCATION-PHONE) T. Carrico - WGK, Extension 2095

August 27, 1985

cc. L. Bumbicka
K. Lichtenheld - CS6G

R. Hartini
R. Nelson
K. Peterson
O. Shipley
TO: P. Hoemann
B. Steketee

Manhole 1BB stripped of asphaltic membrane.

Manhole 1GG accepted and outer protective coating has been applied.

Exothermic and leak repairs between IEE and 2AA still in progress. Joints not involved in repair to be encased this week.

Twenty-four inch stub on north side of 2AA in place.

All concrete in path of sewer removed between 2CC and 2DD by Fruco and asphalt repaired.

Manhole IAA ready for acid brick as soon as a finish procedure has been resolved at flume.

T. Carrico

Operations Foreman

ske

101 1100

HGK 4084617

Monsanto

(NAME-LOCATION-PHONE) T. Carrico - WGK, Extension 2095						
DATE	ι	August 16, 1985	cc. L. Bumbicka			
			K. Lichtenheld - CS6			
TOBLEUS	:	Status Report on CEA 3808	R. Martini			
			R. Nelson			
REFERENCE	:		K. Peterson			
			O. Shipley			
TO	:	P. Hoemann	B. Steketee			

Anticipated requirement list issued for all sewer entries on project.

Asphaltic membrane rejected in 1BB due to dust and concern about adhesion.

1GG water test still not accepted.

Track 6 taken out of service and soldier beams that were pulled along L-46 and the south side of ACL will be used to go to area east of Track 6 through 2CC.

Backfilling proceeding where shoring removed.

All joints made between 1EE and 2AA.

All joints not accepted in test are in various stages of repair between LEE and 2AA.

Exploratory digging and concrete removal at old Department 250 site given to Fruco. Started this week.

T. Carrico

Operations Foreman

skg

HEK 4084618

J.S. ALBERICI

CONSTRUCTION CO., INC.

August 27, 1985

CO: K . LICHTENHELD L. KREH L. BOMBICKA D. NELSON

Monsanto Company Route 3 Sauget, Illinois 62201

Attention: Mr. Ralph Martini

Re: Monsanto Project 3808 Subsurface Sewer Leakage South Main Trunk Sewer

Gentlemen:

On Friday August 23, 1985, we left the above project in a stable, dry condition. Monday August 26, 1985 we arrived on site to an open trench from MHI-EE to MH2-CC with water depths of 12" to 24". Water marks in the trench on concrete structures and pipe indicated overall water depths of 3 to 4 feet.

Investigation of the trench revealed several entry points of water into the open excavation. One point of entry was the leaking pipe encasement across the trench between MH2-AA & MH2-BB indicated by the black oily material washed into the trench. This black oily material also washed into the trench on previous occasions was traced to the leaking encasement which is connected to existing MH2-B-2 and jumper T1.

Further investigation revealed another point of entry which is by far the most serious. Adjacent to the trench southwest of new MH2-CC is existing MH2-F which has developed a leak on the underside of the existing 24° diameter pipe encasement exiting the south side of the existing manhole. Inspecting the leaking encasement with a mirror we discovered that the existing encasement and pipe had failed. This failure, which appears to be an old failure, allowed water to flow from the failed system to our adjacent 42" trench depositing sewerage into the trench.

Preliminary inspection of the trench from MH1-EE to MH2-CC shows that additional work is required to put the trench back in order as left Friday August 23, 1985. Work to be performed as follows:

1. Pump to remove standing water.

2. Water and mud entered our 42" encasement formwork east of MHI-EE

which needs to be inspected and cleaned if needed, prior to pouring.

3. Mud has been deposited on the 42" encasement base, MH2-AA, MH2-BB and inside the 42" pipe between MH1-EE and MH2-AA. This will need to be removed before we can proceed with additional work in these areas.

4084619

2150 KIENLEN AVENUE ST. LOUIS, MISSOURI 63121 UNITED STATES OF AMERICA



Mule 3 a Bay TELECOPIER (314) 261-4225

JS. ALBERICI

Monsanto Company
 Attn: Mr. Ralph Martini
 August 27, 1985
 Page TWO

4. As of Thursday August 22, 1985 we had laid several pieces of 42" pipe in the main trench east of MH2-BB. These pipes, subject to contaminated flows, need to be cleaned and re-blasted prior to setting and joint procedures.

5. In the trench from MH1-EE to MH2-AA approximately 5 curing final pass

joints were subjected to possibly damaging fluid flows.

6. In the trench 1-EE to 2-AA we had eight (8) 42" joints, removed for

 In the trench 1-EE to 2-AA we had eight (8) 42° joints, removed for repairs, which were also subject to possibly damaging fluid flows.

Looking for entry points of surface runoff in the trench we found that all soil dikes placed around the trench perimeter are still in tact eliminating the risk of surface water entering the open trench.

We are currently unable to determine the extent of time delay caused by the leaking pipe encasements and subsequently any clean-up and or additional work required to return the trench and its component parts as left Friday. We will advise Monsanto of this duration at a later date.

Also be advised that any costs incurred by J.S. Alberici to return the trench and its component parts to the condition as left Friday August 23, _ 1985 will be to the account of the Monsanto Company, as we have no responsibility for subsurface leaks or care of flow.

If you have any questions, please call.

......

Sincerely yours,

J. S. ALBERICI CONSTRUCTION CO., INC.

Christopher & Lotz Project Engineer

CJL:jf

cc: Gordon Grundmann Bruce Steketee Bill Koester

WGK 4084620

J.S. ALBERICI CONSTRUCTION CO., INC.

CC:

August 27, 1985

K. LICHTENHELD

L. KREH

L, BomBleKA

D. NELSON

Monsanto Company Route 3 Sauget, Illinois 62201

Attention: Mr. Ralph Martini

Re: Monsanto Project 3808

South Main Trunk Sewer

Gentlemen:

As a matter of information, please be advised that visual observance of the existing 24" encasement thru Manhole 2-CC has revealed a small leak on the east side of the encasement.

Sincerely yours,

J. S. ALBERICI CONSTRUCTION CO., INC.

Christopher J. Lotz Project Engineer

CJL:jf

cc: Gordon Grundmann Bruce Steketee Bill Koester

WGK 4084621

2150 KIENLEN AVENUE ST. LOUIS, MISSOURI 63121 UNITED STATES OF AMERICA



TELEPHONE (314) 281-2811 TELECOPIER (314) 281-4225 TELEX 44-2438

J.S. ALBERICI CONSTRUCTION CO. INC.

August 26, 1985

CO.

K. LIGHTENHELD

L. KREH

D. NGLSON

CS6G Monsanto 800 North Lindbergh Blvd. St. Louis, Mo. 63167

Re: Monsanto CEA 3808
Contaminated Material
Between MH 2-BB & MH 2-CC
And MH 2-CC & MH 2-DD
Main South Trunk Sewer

Attention: Mr. Gordon Grundmann

Gentlemen:

We are hereby notifying you that on August 20 and 21, 1985 we encountered contaminated soil in the trench excavation between MH 2-BB and MH 2-CC and MH 2-CC and MH 2-DD at the South Main Trunk Sewer Project at the Krummrich Plant in Sauget, Illinois.

We were instructed to haul the excavated trench material to the Laidlaw dump. In the afternoon of August 21, 1985, Monsanto instructed us to stop hauling the excavated material to the Laidlaw dump and to start hauling the excavated material to the plant stockpile.

On August 22, 1985 at our construction meeting, Monsanto instructed us as to how to proceed with the disposal of the excavated material between MH 2-CC and MH 2-DD. Monsanto's instructions were that all excavated material between MH 2-CC and MH 2-DD be hauled to the stockpile and placed in a pile. Monsanto then would observe this material and notify us when and how they wished to dispose of the material.

The execution of any special processing of this material may delay the project. Because of the unknown amount of this contaminated excavation material we will encounter, we can not determine the duration of the delay to the project.

After the excavation is completed between MH 2-CC and MH 2-DD, we will notify Monsanto of the duration of the delay and the additional cost to the project.

WGK 4084622

WCK/51k

cc: R. C. Martini

B. W. Steketee

Very truly yours,
WC Koutte AUG 2 3 1985
W. C. Koester

Group Vice President -

2150 KIENLEN AVENUE ST. LOUIS MISSOURI E3121 UNITED STATES OF AMERICA

STATISTICS.

TELEPHONE (314) 261-2611
TELECOPIER (314) 261-4225
TELEX 44-2438

. Cable Address: "... Alberici ... St. Louis, Missouri

234111

3-21/2 To The

J.S. ALBERICI CONSTRUCTION CO., INC.

CE. L. KREH L. BOMBIEKA D. NELSON

August 21, 1985

Monsanto Company Route 3 Sauget, IL 62201

ATTN: Mr. Ralph Martini

Ref: Monsanto Project 3808

JSA Project 8434 Waterjetting MH 1-BB

Gentlemen:

On August 16, 1985, Fleischer-Seeger contacted ABLE Waterblasting Company and set up Wednesday, August 21, 1985, as a date to attempt to remove the laitance asphalt from MHI-BB, as directed as Monsanto, using high pressure waterblasting equipment. Monsanto was aware of this arrangement and was also aware of the need for a minimum 2" hose water supply. Monsanto, being aware of this need, said there would be no problem in meeting this requirement.

On Wednesday, August 21, 1985, Fleischer-Seeger arrived on site with ABLE and a complementary crew of operational people. ABLE, setting up their equipment, requested Monsanto to turn on the hydrant southwest of the BBW Warehouse only to find that their request for a 2" supply was rejected due to plant fire water problems which had existed without our knowledge since Monday, August 19, 1985. Monsanto, however, did say a 3/4" hose could be used to supply the waterblasting equipment, but that the system would probably not be turned on until 12:00 noon. Further discussion with ABLE revealed the fact that a 3/4" hose would not supply sufficient water to the waterblasting equipment and that equipment damage would result.

Consequently, Fleischer-Seeger and ABLE has pulled offsite until Monday, August 26, 1985, when a 2" water source, as estimated by Monsanto, will be available.

Fleischer-Seeger, having no knowledge of Monsanto's fire water problem, acted in good faith to attempt laitance asphalt removal as directed by Monsanto. Because of Fleischer-Seeger's inability to perform as previously arranged, Fleischer-Seeger has incurred equipment and labor costs which will be charged to Monsanto's account.

Covered under CFO

15 2-25

15 suel 8/28/85

LETTER WRITTEN 8/20/05

WEK 4084623

AUG 22 THE

2150 KIENLEN AVENUE ST. LOUIS, MISSOURI 63121 UNITED STATES OF AMERICA

TELEPHONE (314) 261-2611 TELECOPIER (314) 261-4225 TELEX 44-2436



Monsanto Company Mr. Ralph Martini August 21, 1985 Page Two

The charges at this time are not known, but will be forwarded to Monsanto at a later date. Also, be aware that this is another delay which will further impact the completion of this project.

Sincerely yours,

J. S. ALBERICI CONST. CO., INC.

Christopher J. Lotz Project Engineer

CJL/ral

4. 4.

cc: Gordon Grundmann Bruce Steketee W. C. Koester File

MEK 4084624



J.S. ALBERICI CONSTRUCTION CO., INC.

August 20, 1985

K. LICHTENHELD
L. KREH
L. BOMBICKA
D. NELSON

 Monsanto Company Route 3
 Sauget, IL 62201

ATTN: Mr. Ralph Martini

Ref: Monsanto Project 3808

JSA Project 8434

Manhole Finish & Acceptance

Gentlemen:

From the outset of the manhole forming, pouring and finishing procedure, we have had nothing but problems in acquiring final acceptance in order to proceed with further steps to complete each manhole. Monsanto, in their inspection and acceptance of interior manhole surfaces, is requiring us to perform above and beyond the project specifications which is both increasing our costs and delaying project completion time.

In light of the excessive cost and time being utilized to receive manhole concrete and surface acceptance, we will, in the future, adhere to the following procedure which is in accordance with the project specifications:

- We will continue to form and pour the cast-in-place manholes in conformance with the tolerances as set forth in ACI 347 as required by the contract specifications.
- 2. We will sandblast the interior manhole surfaces to expose any surface voids followed by a strong sand and cement mixture to fill the same.
- 3. Surface irregularites, protusions, small projections, and offsets will be removed in accordance with the project specifications, Section 3.4; Finishes.
- 4. Upon completion of the above, we will request an inspection by Monsanto.

 Any punch list items resulting from the inspection will be reviewed for compliance with project specs. Those out of spec will be corrected, while those within the scope of the project will be left as is.

HGK 4084625

2150 KIENLEN AVENUE ST. LOUIS, MISSOURI 63121 UNITED STATES OF AMERICA



TELEPHONE (314) 261-2611
TELECOPIER (314) 261-4225
TELEX 44-2438



Monsanto Company Mr. Ralph Martini August 20, 1985 Paga Two

It is our intent to furnish Monsanto a completed manhole within the scope of the project documents. Any requested modifications to the manhole surfaces beyond this scope will be completed as directed by Monsanto and at their expense.

Sincerely yours,

J. S. ALBERICI CONST. CO., INC.

Christopher J. Lotz Project Engineer

CJL/ral

cc: Gordon Grundmann
Ken Lichtenheld
Bruce Steketee
O. N. Shipley
W. C. Koester
File

HEK 4084626

MONSANTO

Prom:	G.A.	Grundmann	CS6G	Corp	orate	Engineering	(4-6112)
Date:	Augus	st 22, 1985		cc:	D.R.	Bowers	CS6G
	•	•			L.V.	Bumbicka	1740 -
Subj:	Proje	ect Progress	Meetings		R.M.	Calles	CS6G
					M.A.	Coco	Alberici
					J.	Colling	1740
Re:	CEA :	3808 - Main	South Trunk	Sewer	R.J.	Geile	CS6G
					E.R.	Hartman	CS6G
TO:	J.J.	Beckerle	Alberici		P.R.	Hoemann	1740
	W.	Bodine	Alberici		L.C.	Kreh	F2ED
	T.N.	Carrico	1740		P.A.	Mayse	CS6G
	W.C.	Koester	Alberici*		B.W.	Steketee	1740
	K.W.	Lichtenheld	CS6G		R.L.	Wiese	CS6G
	C.J.	Lotz	Alberici*				
	R.L.	Nelson	1740*		*Pres	ent at meeting	
	K.W.	Petterson	1740*		**Par	t time	
	R.C.	Martini	1740*				
	O.N.	Shipley	1740*				
			Fleischer	Seeger**			
	G.	Adams	Fleischer	Seeger**		•	

Following are minutes of the meeting held at the CED construction trailers on 8/22/85 at 9:30 a.m.

Construction Progress

• . . .

- a. Manhole 1-DD interior ready for inspection,
 - b. Manhole 1-GG passed water test.
 - c. Piling driven through manhole 2-CC.
 - d. Excavated to manhole 2-CC plus working on the L-64 lateral.
 - e. The concrete base slab will be poured to manhole 2-CC on 8/23. (Currently 140' east of 2-BB.)
 - f. Some encasement will be poured on 42° pipe between 1-EE and 2-AA.
 - g. 42° VCP set in trench to manhole 2-AA. Joints are being made.
 - h. Repairs are being made on the 42" VCP joints due to leakers on the last test and exotherm areas. The repairs should be complete 8/23 and testing can occur on 8/28.

NGK 4084627

J.J. Beckerle, et al August 22, 1985 Page 2

- i. The trench between manholes 2-AA and 2-BB is currently inaccessible due to the leaking existing pipe which crosses the ditch here. When the flume is complete through manhole 2-AA, this pipe can be blocked off.
- j. Received some additional 42° VCP. More due next week. Three pieces of pipe with blemishes that have been covered with furan need to be inspected by <u>Lichtenheld</u> for acceptance.

2. Contaminated Soil

- a. Still waiting for state permits to haul off stockpiled dirt.
- b. The contaminated dirt handling procedure will be reviewed and revised, if necessary, to insure that there is no possible way contaminated dirt can accidentally be removed from the plant. Nelson, Lichtenheld, Martini, Petterson.
- c. During excavation from manhole 2-CC to 3-AA, there is the possibility of digging up some dirt with traces of phosphorus. This dirt needs to be stockpiled in a separate pile. Martini has detailed plan for dirt stockpiling behind Big Mo.

If any dirt is smoking, it should be spread out in the wedge where the old fab shop was located and allowed to burn, after which it can be taken to the stockpile.

If dirt smokes or catches fire at the stockpile, it needs to be covered.

Any rubble needs to be washed and dried prior to removal.

Workers in this area should wear rubber shoes that can be washed off.

3. Jumpers

- a. The 21° pipe has been received.
- b. The plant work on the acid storage tank has been completed.
- c. Exploratory digging for the 16" water line will begin 8/27.
- d. Nelson requested a reconfirmation by Lichtenheld that the T-3 jumper will handle the normal sewer flow. The flows need also to be confirmed by Nelson.

WGK 4084628

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J.J. Beckerle, et al August 22, 1985 Page 3

. .

e. It may be almost impossible to design a plug that can be pulled during a heavy rainstorm to prevent a backup into the plant. As a result, other options need to be reviewed such as large standby pumps that could pump the excess groundwater further downstream during heavy rainstorms, etc. <u>Lichtenheld</u>, <u>Nelson</u>, <u>Martini</u>.

4. Internal Manhole Work

a. Manhole 1-AA:

The furan membrane is complete on manhole 1-AA and will be cured by 8/23. There is a problem on the flowline on the flume portion of the bottom. The 42° VCP as installed by Alberici is not in total alignment with the curve of the manway bottom due to the obroundness of the pipe. Corrective methods were reviewed:

- Place brick on end and cut it to get a match on the pipe contour. <u>Fleischer Seeger</u> to furnish cost of this option.
- 2) Install a half section of 42" VCP in semicircular trough. Set in furlac cement.
- 3) Taper the flowline from the 42° VCP entry pipe to the brick surface with a 10:1 ratio.

A decision will be made ASAP.

Water was standing in the bottom of the manhole. <u>Fleischer Seeger</u> to better protect the manholes to prevent this.

b. Manhole 1-BB:

Sandblasting didn't work on removing the asphaltic membrane residue. Hydroblast did not appear to be a solution either.

Pleischer Seeger advised to do the following:

- Remove the asphaltic membrane residue by hand scraping.
- Fill the concrete voids as before with sand cement mixture.
- 3) Reprime.
- 4) Put asphaltic membrane back on.

HGK 4084629

. 3.

J.J. Beckerle, et al August 22, 1985 Page 4

c. Manhole 1-CC:

The deep depressions in the encasement $(3/4^{\circ}$ to $1^{\circ})$ need to be filled with material recommended by Nelson. The primer must be ground off first.

These areas need to be reprimed after repair and prior to application of the asphaltic membrane.

5. Department 245

- a. Lotz made layout of culvert pipe under railroad track. It will be approximately 32' long to avoid conflict with the pipe bridge. Installation will be 10/1 to 10/11 (new dates).
- b. The 50 foot working area alongside the tracks will generally be okay. <u>Alberici</u> commented that this much area may not be needed at all times, but certainly needed for pile driving and excavation.
- c. Access by ramp across the track will be required on the west and north sides of the department.
- d. The loading dock to the north must remain operable at all times.

6. Miscellaneous

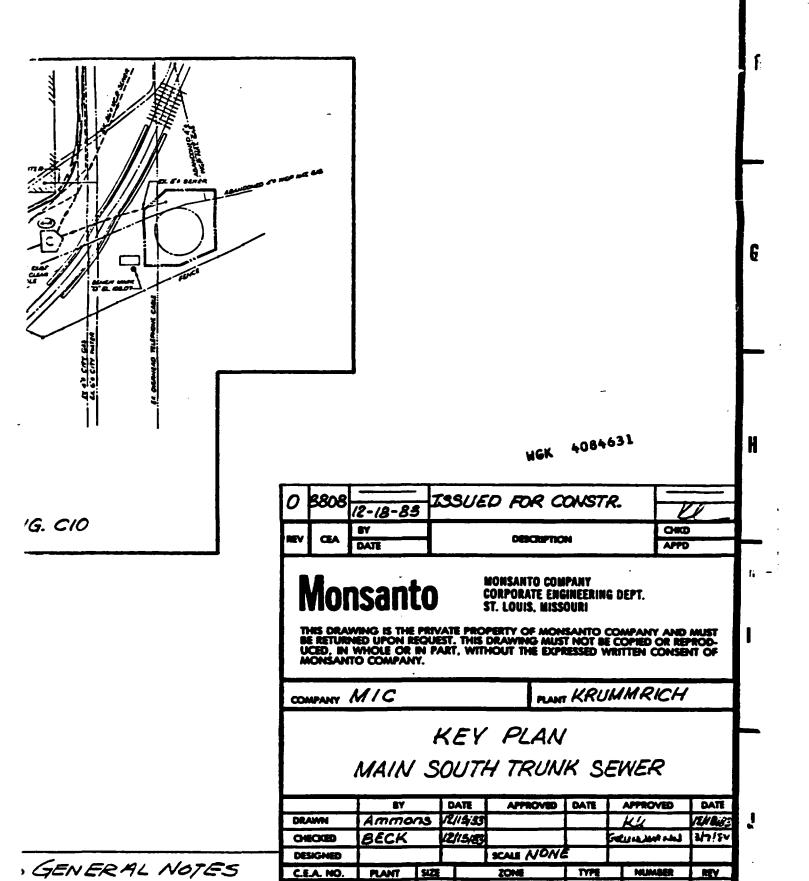
- a. The plan for bringing manhole 1-GG into operation has been worked out. A sleeve will be installed on the north and south sides of the manhole, which can be bricked up when the flume pipe is removed.
- b. A procedure for bringing manhole 1-DD into operation is required. <u>Lichtenheld</u>, <u>Martini</u>, <u>Nelson</u>.
 - c. A VIP inspection of the sewer job is scheduled for September 9. Appropriate preparations need to be made. <u>Martini</u> and <u>Alberici</u>.

The next progress meeting will be held on Thursday, August 29 at 9:30 a.m. at the construction trailers. All Monsanto personnel are to meet prior to this meeting at 9 a.m.

Gordon A. Grundmann

2178Z

WEK 4084630



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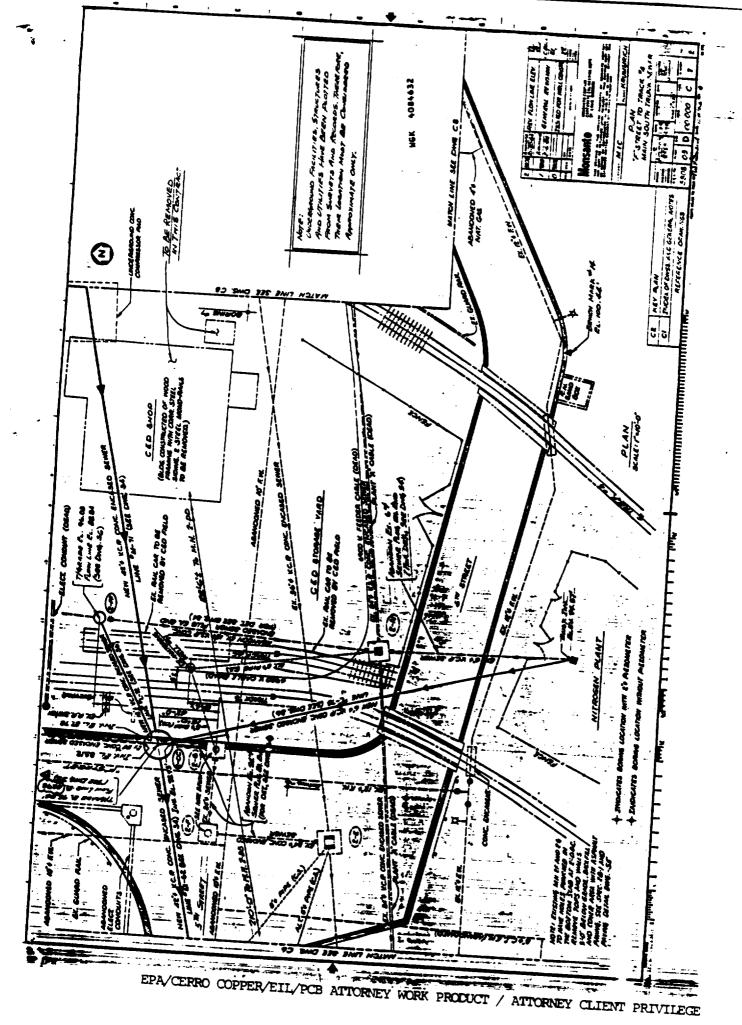
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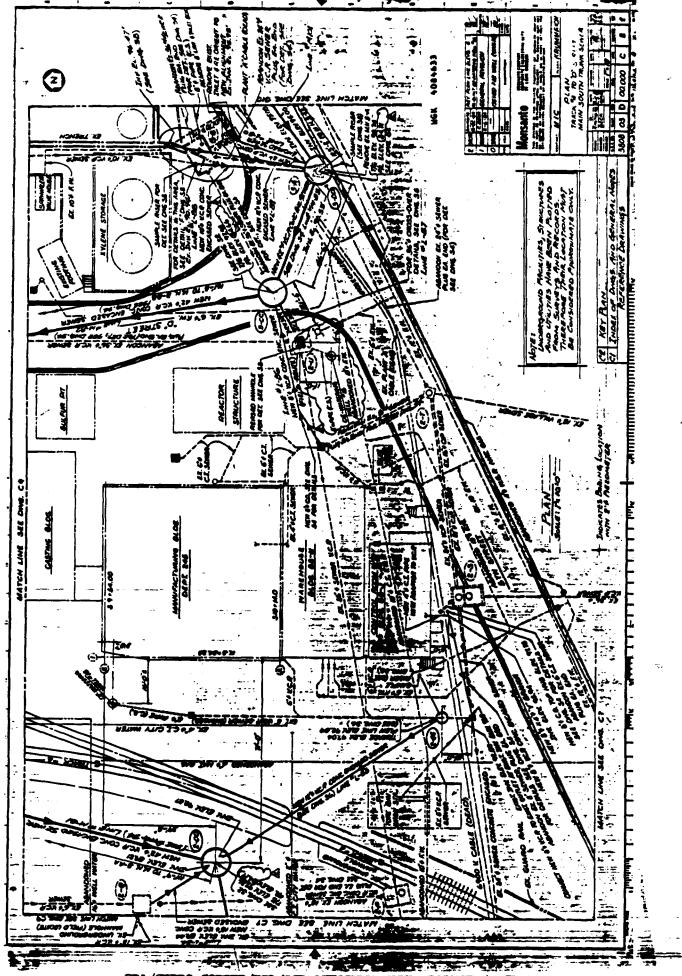
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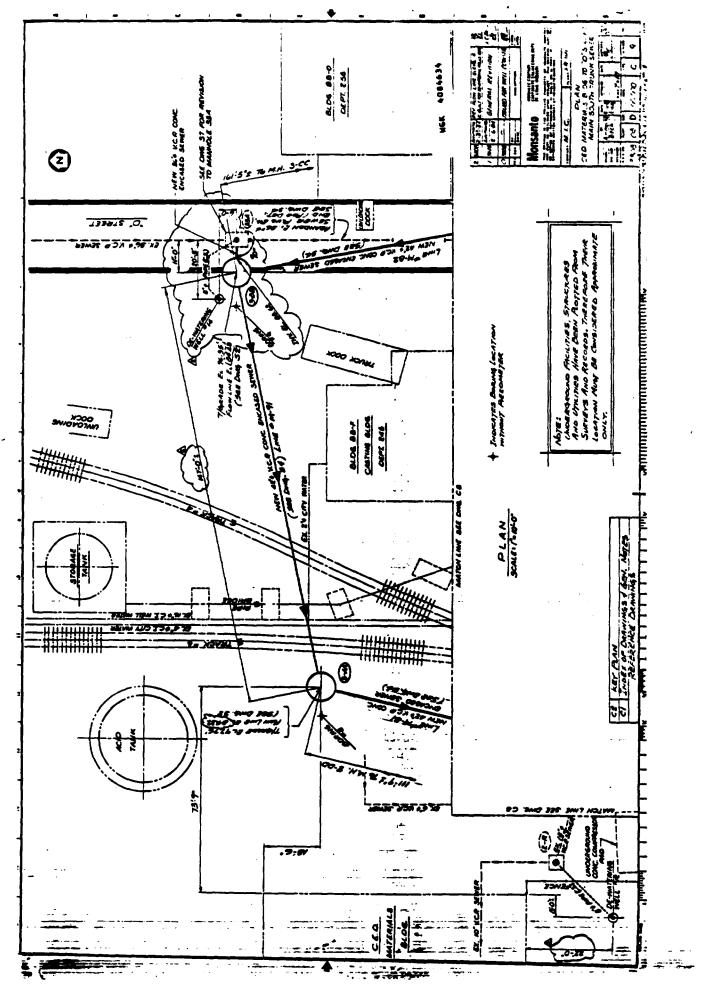
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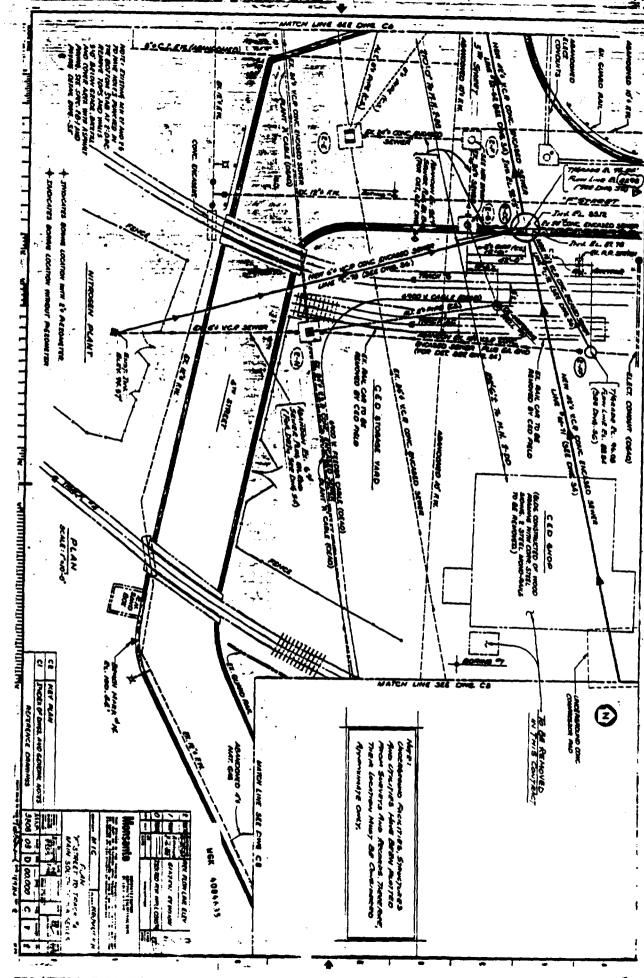




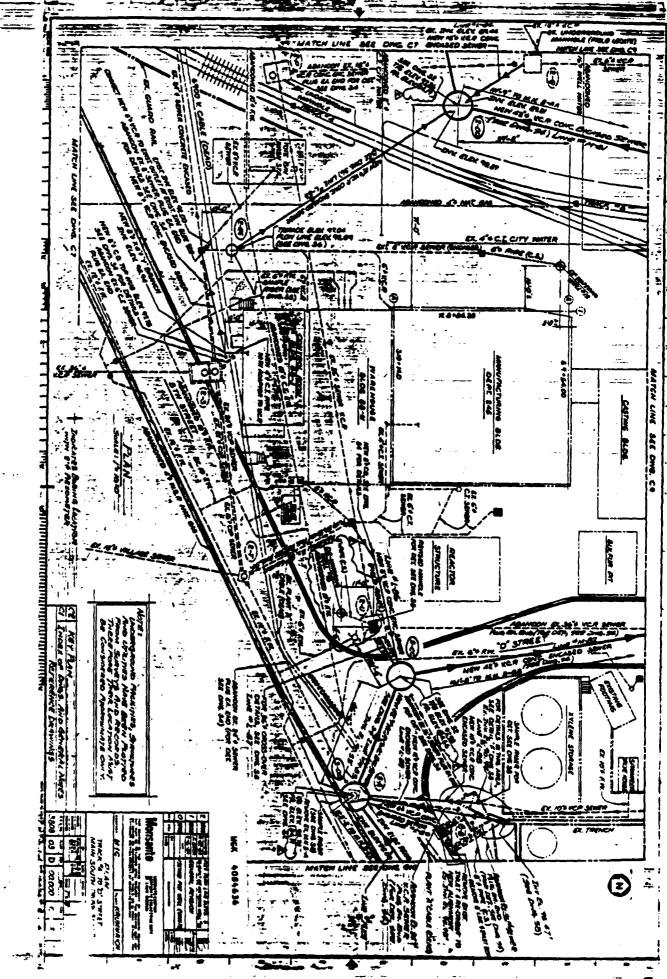
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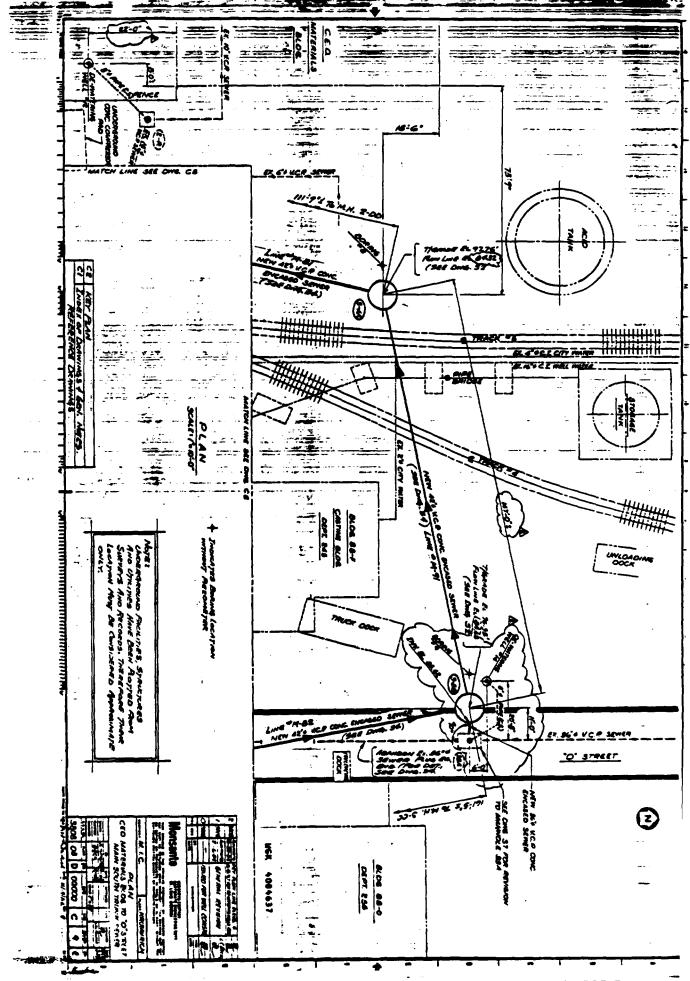
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MONSANTO

2. ----

Prom:	G.A. Grundmann	CS6G_	Corporate	Engineering	(4-6112)
Date:	August 16, 1985	5	cc: D.R.	Bowers	CS6G
			L.V.	Bumbicka	1740*
Subj:	Project Progres	ss Meetings	R.M.	Calles	CS6G
			M.A.	Coco	Alberici
Re:	CEA 3808 - Mais	n South Trunk	Sewer R.J.	Geile	CS6G
			E.R.	Hartman	CS6G
TO:	J.J. Beckerle	Alberici	P.R.	Hoemann	1740
	W. Bodine	Alberici	L.C.	Kreh	F2ED
	T.N. Carrico	1740*	P.A.	Mayse	CS6G
	W.C. Koester	Alberici*	B.W.	Steketee	1740
	K.W. Lichtenhel	ld CS6G	R.L.	Wiese	CS6G
	C.J. Lotz	Alberici*			
	R.L. Nelson	1740*	*Pre:	sent at meeting	
	K.W. Petterson	1740*	**Pa:	rt time	
	R.C. Martini	1740*			
	O.N. Shipley	1740*			
	R. Schlereth	Pleischer	Seeger**		,
	G. Adams	Fleischer		-	

Following are minutes of the meeting held at the CED construction trailers on 8/15/85 at 9:30 a.m.

1. Construction Progress

- a. Piling pulled between manholes 1-DD to 1-EE and 1-EE to 1-JJ.

 Piling has been driven up through manhole 2-CC.
- b. A mark is to be placed on manhole 1-GG and checked 1 day later to see if the water level has dropped prior to manhole acceptance.
- c. Manhole 1-DD is ready for injection on the inside.
- d. Backfilling is in progress between manholes 1-DD to 1-EE and 1-EE to 1-JJ.
- e. Encasement of the 42" pipe is being accomplished where possible between manholes 1-EE and 2-AA.
- f. Bracing is in progress between manholes 2-BB to 2-CC and 2-AA to 2-EE.
- g. The 24° stub out of manhole 2-AA to the north has been set.

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J.J. Beckerle, et al August 15, 1985 Page 2

- h. New joint work is being done on the new 42° pipe between manholes 1-EE and 2-AA. Repair of the joints on this run that leaked or showed exothermic reaction is in progress.
- i. Grading of the trench is in progress between manholes 2-BB and 2-CC prior to installation of the base slab.
- j. The flume through manhole 2-AA will be complete next week.

2. Contaminated Soil

- a. Still waiting for permits from the state to remove stockpiled dirt.
- Martini will take steps to get the large pieces of concrete, etc. at the stockpiled lot hosed off and hauled to a dump.

3. Jumpers

Work is in progress on jumber T-3.

- a. 21" pipe has been ordered with the urethane cleaned off the spigot ends of the pipe. This pipe will be put in per the original drawing using Tufchem.
- b. Cutting up of an acid storage tank by the plant has delayed exploratory digging in this jumper. Work will be complete on 8/20.
- c. Our current target is to have the exploratory work done in the next 2 weeks so the routing can be resolved by 8/30.
- d. Actual work on the jumper could begin on 9/3 and will take 2-3 months. No dewatering is anticipated in this area.
- e. Nelson and Bumbicka to discuss the contingency plans for using this jumper when there are overflows, etc. The jumper is only sized to handle standard flows.

4. Internal Manhole Work

a. The first layer of furan and mesh has been placed on manhole 1-AA. After a 3-day cure, the final coat will be applied on 8/19.

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J.J. Beckerle, et al August 15, 1985 Page 3

> b. On manhole 1-BB, dust from concrete grinding in an adjacent manhole, coated the primer. A portion of the first asphaltic membrane layer was applied over this concrete dust coating. To remedy this unacceptable situation, <u>Fleischer</u> <u>Seeger</u> has removed this membrane.

Alberici will remove by sandblasting on 8/16 the portions of this membrane that could not be scraped off. The primer will then be reapplied and after that the asphaltic membrane.

- c. At the time <u>Alberici</u> sandblasts the membrane off, they will also sandblast the 42° pipe protruding into the manhole wall.
- d. In the future, Fleischer Seeger will apply the primer the day before they install the asphaltic membrane.
- e. The step by step procedure for applying the asphaltic membrane will be as follows:
 - Apply the 1st asphalt layer all the way around the manhole on the top 6' - approx. 1/8" thick. The material will be applied from the bottom to the top.
 - 2) Perform step 1 for the middle 6' of the manhole.
 - 3) Perform step 1 for the bottom 6' of the manhole.
 - 4) Apply the mesh from the top down. <u>Fleischer Seeger</u> to try to use long vertical strips. This would minimize horizontal laps. The mesh will be overlapped at the ends.

If there is any difficulty in rolling the mesh into the asphalt, Fleischer Seeger will advise.

- 5) Repeat steps 1, 2 and 3 for the 2nd asphaltic membrane layer.
- 6) On the floor of the manhole the materials should be applied without stopping from the walls as follows:

1st asphalt layer - out 6° from wall membrane - out 4° from wall 2nd asphalt layer - out 2° from wall

WGK 4084640

J.J. Beckerle, et al August 15, 1985 Page 4

> f. There are high spots which need to be ground on manhole 1-CC. Prior to grinding the 42° openings should be covered so that the grinding dust does not get to another manhole.

5. Dept. 245

- a. Lotz to layout the culvert pipe under track #4 at 245. The pipe will probably be 30' long. This should insure that it does not end under the pipe bridge east of the track, which could complicate the installation work. The work will be done 10/4 to 10/17.
- b. Current dates for work at dept. 245.
 - 1) 2-CC 2-DD Install 9/85 to 2/86
 Start driving pile early September
 Start excavating 9/15
 - 2) 2-DD 3-AA Install 9/85 to 2/86 Start driving pile 9/86 Start excavating 10/15
 - 3) 3-AA 3-BB Install 9/85 to 4/86
 Start driving pile 9/85
 Start excavating 11/15 to 12/1
- c. Alberici needs 50' of space off trench centerline to do work. Nelson and Bumbicka to review with Jody.
- d. <u>Carrico</u> and <u>Martini</u> to be sure fire water line in this area has been abandoned. They will also check the location of the city water line.
- e. The 12° pipe to be installed under lateral L-85 will be assembled and encased ahead of time. The section will be about 32' long.

<u>Lichtenheld</u> to furnish <u>Alberici</u> with lifting information for this section, plus any rebar change, if required.

This section will be installed between 10/15/85 and 1/86. A 6-day outage is required.

WGK 4084641 ...

J.J. Beckerle, et al August 15, 1985 Page 5

used to keep job moving if there is difficulty in testing the 42° joints in previous sections.

6. Miscellaneous

- a. <u>Lichtenheld</u> to have drawing C8 updated with revised location of manhole 2-FF.
- b. Manhole 2-CC will be flumed across like manhole 2-AA.
- c. The fire main, from the front end of the job to manhole 1-EE will be installed at one time when this can be done. It will not be piecemeal.
- d. A procedure for 1-GG will be issued by <u>Alberici</u> and <u>Shipley</u> for bringing manhole 1-GG into service.
- e. Nelson and Bumbicka are researching and will advise what to do if and when phosphorous is uncovered in subsequent excavations. Andy Quick is involved.

The next progress meeting will be held on Thursday, August 22 at 9:30 a.m. at the construction trailers. All Monsanto project personnel are to meet prior to this meeting at 9:00 a.m.

Gordon A. Grundmann

2178Z



From:	G.A. Grundmann	CS6G	Corporate Engineeri	ng (4-6112)
Date:	August 16, 1985		cc: D.R. Bowers	CS6G
Subj:	Project Coordinat	ion Meeting	L.V. Bumbicka R.J. Geile	1740 CS6G
Re:	CEA 3808 - Main S	outh Trunk Sewer		F2ED 1740
			P.A. Mayse R.C. Ferrario	CS6G CS6G
TO:	T.N. Carrico K.W. Lichtenheld R.C. Martini	1740* CS6G 1740*	*Present at mee	ting
	R.L. Nelson R.W. Petterson O.N. Shipley	1740* 1740* 1740*		

Pollowing are minutes of the meeting held at the CED construction trailers on 8/15/85 at 9:00 a.m.

1. Ground Water Pumping Rate

- a. Another way in which we are minimizing the flow of ground water to the treatment plant is by the automatic control on the dewatering pumps. The pumps only run when the high water level switch is triggered and shut off at low level.
- b. We currently have no way to monitor the flow from the dewatering pumps.
- C.... The automatic control mechanism needs to be repaired on one pump. . <u>Martini</u>.

2. Dept. 245

a. The foundation exploration work between manholes 2-DD and 3-AA will be done 8/26 to 9/27. Access to department 245 will be left across this line of work.

There may be a need for paving so that fork lift trucks can cross this area.

3. Joint Costs

The following information is being or needs to be assembled for the coordinator meeting on 8/22. Refer to JSA's letter of 7/1/85.

1,74



T.N. Carrico, et al am August 15, 1985 Page 2

- a. <u>Lichtenheld</u> has a letter coming from Pennwalt comparing shrinkage of the old furan and the new green panel material. (para. 3)
- b. Shipley to work with DeWald to assemble data on the percentage of leakage of the old type joint at the JFQ plant. (para. 3)
- c. Shipley and Petterson to assemble data on any times when the dewatering system failed or plugs failed and affected the curing of pipe joints (para. 4)
- d. Shipley and Petterson to assemble data on times we disrupted joint curing due to the unloading of benzene. (para. 5)
- e. <u>Ferrario</u> has estimated approximate cost of 42° joint based on the original design which was based on the JPQ sewer project. <u>Alberici</u> is to furnish the total cost of the joint. The additional cost by itself is not enough information. (1st cost para.)
- f. Shipley is to get a feeling for the comparative difficulty of both types of joints. (1st cost para.)
 - g. <u>Petterson</u> needs to assemble the number of joints tested to date and the 1st time leakers. (2nd cost para.)

h. Nelson to review plant records and/or talk to other plant personnel for any useful information.

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Gordon A. Grundmann

1124C

HGK 4084644

(NAME-LOCATION-PHONE) Sea. 2575 P I Nelson / WCK

DATE

August 16, 1985

cc. K. Petterson

REFERENCE

Fleischer Seeger's Installation

L. Bumbicka K. Lichtenheld

of Asphaltic Membrane

G. Grundmann

TO

Ralph Martini CED 3808

K. Lichtenheld and I reviewed R. Schlereth's procedure for installing the asphaltic membrane with N. Hucksley and L. Sheppard, of Pennwalt, yesterday (8/15/85). Mr. Hucksley and Sheppard expressed concern over the possible asphalt buildup on the lower sections of membrane by starting at the top section. If Fleischer Seeger can prevent this buildup, we will accept the following procedure for installing the asphalt membrane:

- 1. Manhole is to be clean, all dust removed from walls and then primed. The entire surface shall be thoroughly covered (entire concrete surfaces should be black) with no puddling.
- 2. Starting at the bottom of the top 1/3 of the manhole apply hot asphaltic membrane from the bottom up to the top around the entire inside perimeter in successive applications to build a thickness of 1/8". Prevent runs onto lower portion of manhole. The use of rags, fabric or other fibrous materials to stop runs is strictly forbidden. Remove any material which may have run onto lower surfaces. At laps remove all material in excess of 1/8" in thickness.
- 3. Repeat Step 2 in the 2nd 1/3 of the manhole.
- 4. Repeat Step 2 in the bottom 1/3 of the manhole. Extend the asphaltic membrane onto the floor a distance of 6" from the manhole wall. Remove all material in excess of 1/8" from this floor extension. Remove all drips, splatters, etc., from the floor past the 6" extension.
- 5. Upon completion of Steps 1 thru 4 the entire interior walls of the manhole should have 1/8" thickness of membrane. Inspect surfaces and laps with a pin to insure a thickness of 1/8" asphaltic membrane. Remove any material in excess of 1/8", add material in areas below 1/8" in thickness.
- Install fiberglass asphalt impregnated cloth (black) starting at the top of the manhole working down. Cloth to be installed in one vertical piece, the width of the roll. Lap adjoining pieces of cloth 3". Project cloth from the wall onto the floor a distance of 4".
- 7. Apply the final layer of hot asphaltic membrane as described in Steps 2, 3, and 4, building a finished thickness of 1/4". Extend final layer of asphalt onto the floor a distance of 2" from the wall. Check finished membrane for thickness and compliance with specs. Remove all material in excess of 1/4". Fill areas below 1/4" in thickness.

R. L. Nelson

dm

4084645

CEA 3808 South Trumb Sul 3/15/85 J. Shundman Fledler-Sugar W Koester A Nichtenhald Q. Relson Cota. D. aldams. J. Canice K. Peterson August 2 memo for groundwater procedur to mindning 1-AA Butting I wan strip coass on Fine today, I Lay day, final fluor layerned_ well (Morday). I day euro, they buchand 1-00 dust from grinding o menhous removed JEA to saidlest. dust out of other montole at save time JOA to southland They need to finest with concert again. where ten is. Odly blast & 1-CC Challe marker - Geforgunden aling Rober so dust doesn't com back File driving and pulling piling continues 1-66 full of water with no least up since Wednesday (4-15 Says). Outnew markein it, refell and shock 1-DD ready for reinspection Past Dice set toda HEK 4084646

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MONSANTO

Prom:	K.W. Lichtenheld	CS6G	Corporate Engineering	(6627)
	August 12, 1985		cc: D.R. Bowers _ L.V. Bumbicka	CS6G 1740
Subj:	Project Coordinat	ion Meeting	R.J. Geile	CS6G
Re:	CEA 3808 - Main S	outh Trunk Sewer	L.C. Kreh B.W. Steketee	F2ED 1740
ve.	CEA JOOG - NEIN 2	outh Itulik Sewer	P.A. Mayse	CS6G
TO:	T.N. Carrico G.A. Grundmann R.C. Martini R.L. Nelson K.W. Petterson G.N. Shipley	1740* CS6G 1740* 1740* 1740*	*Present at meeti	ng

Following are minutes of the meeting held at the CED construction trailers on 8/9/85 at 9:00 a.m.

1. Repair of cracked VCP at L-35

Discussed various methods of repair for the cracked pipe. Lichtenheld & Nelson stated that there is no known method of repair that would be permanent and satisfactory for this project except to completely remove the cracked pieces of VCP.

2. Investigation of possible underground obstructions at P2S5

Fruin-Colnon will begin excavation on Monday 8/12 to locate any possible underground foundations in the path of the sewer.

3. Sewer Entry Permit

A clothes/equipment list for all manholes has been assembled. The list is not all inclusive and may change depending on flows, etc. A note to this effect will be added by Carrico.

K.W. Lichtenheld

ga/1124C

MONSANTO

i -- *

Prom:	K.W. Lichtenheld	CS6G	Corporate	Engineering	(4-6627)
Date:	August 12, 1985		cc: D.R.	Bowers	CS6G
	•		L.V.	Bumbicka	1740
Subj:	Project Progress	Meetings	R.M.	Calles	CS6G
-			M.A.	Coco	Alberici
Re:	CEA 3808 - Main	South Trunk	Sewer R.J.	Geile	CS6G
			E.R.	Hartman	CS6G
TO:	J.J. Beckerle	Alberici	P.R.	Hoemann	1740
	W. Bodine	Alberici	L.C.	Kreh	F2ED
	T.N. Carrico	1740*	F.A.	Mayse	CS6G
	G.A. Grundmann	C\$6G	B.W.	Steketee	1740**
	W.C. Koester	Alberici*	R.L.	Wiese	CS6G
	C.J. Lotz	Alberici			
	R.L. Nelson	1740*	*Pres	ent at meeting	
	K.W. Petterson	1740*	**Par	t time	
	R.C. Martini	1740*			
	O.N. Shipley	1740*			
	R. Schlereth	Fleischer	Seeger**		
	R.B. Knoll	Pleischer	Seeger		

Following are minutes of the meeting held at the CED construction trailers on 8/9/85 at 9:30 a.m.

1. Construction Progress

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- a. T-2 jumper installed.
- b. Excavation between manhole 2-AA & 2-EE and manhole 2-BB & 2-CC continues.
- c. "42" dia. VCP has been installed and cleaning up is being done between manhole 1-EE & 2-AA.
- d. Lateral L-45 pipe has been installed and encasement forms are being installed.
- e. Encasement poured between manhole 1-EE & 1-JJ.
- f. 42" VCP tested between manhole 1-EE & 2-AA. There were 3 leakers out of 18 joints. 4 joints had evidence of bubbling due to exotherm and this material will be ground out of the joint.
- g. Lateral L-35 was retested. Cracks are present in 2 pieces of VCP, in and adjacent to the bell.
- h. Test on manhole 1-GG. Some leaks in the windows were present and have been patched.

J.J. Beckerle, et al August 9, 1985 Page 2

- Poured manhole 2-AA and installed stub for lateral to the north.
- j. 24° dia. flume at manhole 2-AA to be installed as jumper T-l is being used to divert flow to the east.
- k. Additional grinding on manholes 1-BB & 1-CC was done at encasement to bring manholes into spec.
- Alberici has cost figure on tunnel crossing between manhole 3-AA & 3-BB.
- m. Alberici has cost estimate on joints to be redone due to exothermic damage.
- n. Manhole 1-AA has first step of furan lining installed.
- o. Manhole 1-BB. Asphalt membrane being applied after grinding of walls was accepted.
- p. Asphalt membrane. R. Schlereth stated that they were not having any problem with the high asphalt temperatures. They are maintaining kettle temperatures of 360°-400°F, with pouring temperatures at 360°F. They are also not having any asphalt running and dripping as before.

2. Contaminated Soil

- a. Still waiting for state permits to ship stockpiled material.
- b. Petterson to give Nelson quantities of earth to be landfilled that are stockpiled.

3. Jumpers

- a. The 21° dia. VCP for T-3 was ordered with extra fittings for possible changes.
- b. Investigation of undergrounds for this jumper is held up due to the presence of the MCB tank in the area. This work should get started about August 14.
- c. A discussion of the type of joint to be used for the jumpers ensued. <u>Lichtenheld</u> stated that his position has been as follows:

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J.J. Beckerle, et al August 9, 1985 Page 3

- 1) Use the joint shown on the contract drawings.
- Permission was given to JSA at their request to use Tamping Mix instead of the Tufchem II and at no additional cost to the project.
- Use plain bell pipe (no gaskets).
- 4) Use gasket supplied by Dicky on pipe and remove the gasket.
- 5) Joints 3 & 4 would require fully packed joints.

4. Dept. 245

- a. It has been decided to use a corrugated metal pipe under the gracks between manhole 3-AA & 3-BB. Petterson to get with JSA and determine length and get corrugated pipe on order.
- b. JSA indicated that 8 working days are required to install the corrugated pipe under the tracks.

5. VCP Joints

a. <u>Koester</u> agreed that JSA would flag Monsanto personnel on any future exothermic reaction causing boiling so that revised procedures and/or steps could be implemented to prevent this condition.

6. Miscellaneous

- a. It was pointed out that the specs call for sandblasting all surfaces of VCP where membranes lap onto pipe.
- b. A cost estimate on lateral L-85 under the tracks is due by JSA.
- c. Extra work will be required of JSA to meet housekeeping requirements for the plant inspection on October 1 & 2.
- d. Lichtenheld advised project members that he will be on vacation from 8/17 through 9/3/85.

The next progress meeting will be held on Thursday, August 15, at 9:30 a.m. at the construction trailers. All Monsanto project personnel are to meet prior to this meeting at 9:00 a.m.

K.W. Lichtenheld

ga/21782

WEK 4084650

TO

T. Carrico - WGK, Extension 2095

DATE : August 12, 1985

SUBJECT : Status Report on CEA 3808

R. Lichtenheld - CS6G

R. Martini
R. Nelson
K. Peterson
O. Shipley

P. Hoemann

Asphaltic membrane was accepted on 1-AA and first coat of Furan membrane is curing.

B. Steketee

Alphaltic membrane is being applied in 1-BB.

1-GG in water test phase.

Retest on L-35 failed hydrotest.

Backfilling and compaction proceeding south of ACL by treatment plant.

L-45 and L-46 are encased and soldier beams will be pulled today for work at 2-CC.

2-AA poured and forms are being stripped.

Base slab for 41" poured all the way to 2-AA.

42" hydro between 1-EE and 2-AA had three leaking joints. Repairs started. Six joints to be repaired due to rapid exothermic reaction.

Jumper T-2 in, back fill in progress.

Track 6 out of service August 12, 1985.

Jonn (anico
T. Carrico
Operations Foresan

skg

FROM SHAME-LOCATION-PHONE)	T.	Carrico	-	WGK,	Extension	2095

August 5, 1985 DATE

cc. L. Bumbicka

K. Lichtenheld - CS6G

TOSLOUS

Status Report on CEA 3808

R. Martini

R. Nelson

REFERENCE

K. Peterson

P. Hoemann

O. Shipley

TO

B. Steketee

Retest on L-35 will be done today.

Fleischer-Seeger still working on asphalt membrane in sewer box 1-AA.

Fifteen inch L-46 between 1-EE and 1-JJ passed hydrotest.

Base slab poured and sewer layout started on L-45.

Twenty-four inch plugged north and south at 1-B and forming of sewer box 2AA begun, flow being diverted through jumper #1 then down 15 inch east side of "G" Street.

2-BB stripped of forms.

Excavation work was completed to expose the tie in points for jumper #2.

Exploratory digging was done at sewer box 4E so future routing of jumper #3 could be determined.

T. Carrico

Operations Foreman

skg

WGK 4084652

IN-1120

Monsanto Company Corporate Engineering Department Sauget, Illinois 52201

August 5,1985

J.S. Alberici Construction Co. 2150 Kienlen Avenue St. Louis, Missouri 63121

Attention: Mr. Christopher J. Lotz

Subject: Monsanto Project 3808

South Trunk Sewer JSA Job #8434

Ref: JSA Letter dated July 30,1985

The disruption of the joint operation as described in the referenced letter resulted from Monsanto observations of deviations from the project specifications during joint operations on July 24,1985. JSA was requested to discontinue operations until such time that JSA could assure Monsanto they would conform to the specifications. During the meeting of July 25,1985 the JSA procedure for 42" joint makeup was reviewed. The procedure was presented for Monsanto to review in JSA letter of July 26,1985 and Monsanto comments have been presented in our letter dated August 2,1985. The procedure was not followed during the operation observed initally on July 24,1985. Deviations included elimination of dry set and associated alignments of the new pipe and movement of the pipe after contact was made.

On July 25,1985 Monsanto observed "out of spec material" in previously made joints caused by excessive exothermic reaction during curing of the material. The possibility this condition occuring had been previously discussed with JSA on several occasions and solutions presented to avoid the problem when high atmospheric temperatures started causing excessive temperatures during the curing process. Although the problem existed for a considerable time prior to July 25,1985, JSA had not taken any steps to correct the situation, thus Monsanto indicated that any further corrective action required to repair such "out of spec" material would be to JAS account. JSA selected to discontinue the placement of second pass material.

The black and oily material you mention in the ditch would not have any bearing on failure of the joint material, however it is believed that water in contact with the joint material during the curing period, could adversely affect the cure and the integrity of the joint.

HEK 4084653

Page 2 JSA Chris Lotz August 5,1985

Monsanto has agreed to share the cost of reblasting and clean-up of the pipe. Monsanto does not accept any adjustment to the GMP for repairs required due to leakage of the pipe joints from MHI-EE to MH 2-AA.

Bruce W. Steketee Site Construction Manager

CC:

W.C. Koester - JSA
L. Bumbicka - 1740
D. Nelson - 1740
O. Shipley - 1740
R. Martini - 1740
G. Grundmann - CS66
K. Lichtenheld-CS66
L. Kreh - F2ED

NGK 4084654

-1-

Monsonto Company Corporate Engineering Department Sauget, Illinois 52201

August 2, 1985

J.S. Alberici Construction Company 2150 Kienlen Avenue St. Louis, Missouri 63121

Attention: Christopher J. Lotz
Subject: Monsanto Project 3808
South Trunk Sewer
JSA Job #8434

Reference: J.S. Alberici letter dated July 26,1985

42" Pipe Joint Procedure

Monsanto has reviewed your joint procedure as presented in the referrenced letter and has the following two comments:

- First paragraph, second to last sentance. When dry set of pipe is made <u>End Gap</u> must be checked for conformance to the specified tolerances first, followed by centering and invert alignments.
- 2. Second paragraph additionally, any movement of pipe after making contact is unacceptable other than motion required for straight ahead inserting of the new pipe into the bell and as required when releasing the inserted pipe from the insertion rig. If additional movement takes place, the new pipe is to be removed and inspected to ensure that the joint material is properly in place.

Please recognize that the intent here is to avoid loss of mortar material prior to compressing the joint.

Monsanto considers these comments to be within the scope and specifications of the contract: and required to obtain a quality product.

We appreciate your interest in increasing productivity and minimizing project costs and will support your efforts whenever possible without sacrificing quality.

WEK 4084655

.... August 2,1985 Christopher J.Lotz CEA 3808 South Trunk Sewer Page 2

> Please let me know if you have any disagreement with the comments stated herein.

> > Sincerely,

Site Construction Manager

BWS/acg

CC: W.C. Koester JSA

L. Bumbicka -1740

D. Nelson -1740
O. Shipley -1740
R. Martini -1740
G. Grundman -CS6G

K. Lichtenheld-CS6G

.. L. Kreh -F2ED

HGK 4084656

MONSANTO

From:	Gordon A. Grundma	nn CS6G	Corporate Engineering	(6112)
Date:	August 2, 1985		cc: D.R. Bowers L.V. Bumbicka	CS6G 1740*
Subj: Re:	Project Coordinat		R.J. Geile L.C. Kreh	CS6G F2ED 1740*
			F.A. Mayse	CS6G
TO:	T.N. Carrico K.W. Lichtenheld R.C. Martini R.L. Nelson K.W. Petterson O.N. Shipley	1740* CS6G* 1740* 1740* 1740*	*Present at meetin	ng

Following are minutes of the meeting held at the CED construction trailers on 8/1/85 at 9:00 a.m.

1. Ground Water Pumping Rate

Bumbicka requested that a ground water control procedure be developed to indicate the kinds of actions that can be taken to minimize the flow of water to the treatment plant via the dewatering pumps. This will serve as a basis to try to predict the flowrates next year after May 1.

The kinds of things we are doing now are as follows:

1. Monitoring ground water level.

٠..

- 2. Based on the current ground water level results (in #1), dewatering pump #4 was able to be shut down last week.
- 3. Each pump is furnished with a discharge valve to allow the pump discharge rate to be cut back when possible.

All project personnel are to present their ideas.

2. Department 245

Shipley and Nelson met with the department 245 personnel to discuss the sewer work in this area and the timing. Some of the areas discussed follow:

MGK 4084657

T.N. Carrico, et al August 1, 1985 Page 2

> a. Exploratory work for foundations. West - 8/1 to 8/15 East - 8/15 to 8/22

- b. Excavation for the trench from manhole 2-DD to 3-AA 8/22 to 10/1.
- c. Tunnel under track #4 10/4 to 10/17.
- d. Sewer installation

2-CC to 2-DD 8/15/85 to 12/31/85 2-DD to 3-AA 11/1/85 to 4/1/86 3-AA to 3-BB 4/1/86 to 8/1/86

e. Construction needs to identify the items the project will do to keep them operating, e.g., tunnel under #4 track, etc.

Shipley and Martini to review the dates above, and assemble the other information required.

3. Sewer Entry Permits

A list of all the clothes, etc., required to enter each of the sewers <u>Alberici</u> may have to enter on the project is to be assembled by <u>Carrico</u>. Refinements will, of course, be made at the specific time entry is made. This approach, however, is intended to minimize any possible delays on future sewer entry permits.

4. Jumper T-3

Bumbicka requested that a detailed scope of work be developed for the T-3 jumper. The intent is to explain how the jumper will be used and during what periods of time. The risks of using this jumper also need to be identified.

This information will allow close coordination with the various manufacturing groups that will be affected by the sewer construction work and the use of jumper T-3.

We are planning on installing the jumper now while the weather is nice, even though we will not use it for a number of months. The jumper is very difficult to install and by doing the work now, we can discover and resolve any problems now.

T.N. Carrico, et al August 1, 1985 Page 3

Shipley and Martini to assemble this information with assistance from Lichtenheld where required.

5. Manhole 1-CC

The inverts of the 42" inlet and outlet pipes need to be checked. Shipley and Martini.

6. Joint Costs

As previously covered in our meeting and summarized in my memo of 7/29/85, we need to assemble our data on the joint contention points so that we can review this data with management the week of 8/12/85 prior to a rebuttal to Alberici.

Gordon A. Grundmann

1124C

NGK 4084659

MONSANTO

From:	Gordon A. Grundma	nn CS6G	Corporate	Engineering	(4-6112)
Date:	August 2, 1985		cc: D.R.	Bowers	CS6G
			L.V.	Bumbicka "	1740
Subj:	Project Progress	Meetings	R.M.	Calles	CS6G
-			M.A.	Coco	Alberici
Re:	CEA 3808 - Main S	outh Trunk		Geile	CS6G
			· E.R.	Hartman	CS6G
TO:	J.J. Beckerle	Alberici	P.R.	Hoemann	1740
	W. Bodine	Alberici	L.C.	Kreh	F2ED
	T.N. Carrico	1740*	P.λ.	Mayse	CS6G
	W.C. Koester	Alberici*	B.W.	Steketee	1740*
	K.W. Lichtenheld	CS6G*	R.L.	Wies e	CS6G
	C.J. Lotz	Alberici*			
	R.L. Nelson	1740*	*Pres	ent at meeting	ī
	K.W. Petterson	1740*	**Par	t time	
	R.C. Martini	1740*			
	O.N. Shipley	1740*			
	R. Schlereth	Fleischer	Seeger**		
	R.B. Knoll	Fleischer	Seeger**	•	

Following are minutes of the meeting held at the CED construction trailers on 8/1/85 at 9:30 a.m.

1. Construction Progress

- a. Continued making joints on 42° VCP east of manhole 1-EE.
- b. Concrete encased 42" pipe through culvert from manholes 1-DD to 1-EE. Forms stripped.
- c. Concrete encased lateral L-43.
- d. Starting installation of 18° VCP lateral L-45.
- e. Final joint passes being made on 15° VCP lateral L-46.
- f. Forms stripped off manhole 2-BB walls.
- g. Currently forming manhole 2-AA walls.
- h. Continuing to excavate 42° trench east of manhole 2-BB.
- i. Backfilling east of manhole 1-DD and pulling pile.

2. Contaminated Soil

-1:

Still waiting for state permits to ship stockpiled material.

J.J. Beckerle, et al August 2, 1985 Page 2

3. Jumpers

- a. Jumper T-1 has been installed.
- b. Excavation has exposed both tie-in points for jumper T-2. A revised method of installation has been agreed to for the 12° VCP where it enters the existing manhole 2-V. (A reducer will not be used.)
- c. A review of the T-3 jumper was made. Digging at existing manhole 4-E is required to determine the best way to get out of the manhole. An investigation of 4th Street will be required to see how to best avoid the utilities. Checks also required on existing manholes 33-C-1 and 33-B.

Alberici to advise Lichtenheld of comparative cost and delivery of 21° vs. 24° VCP. The 21° pipe is nonstandard and may have a 3-4 week delivery.

4. Internal Manhole Work

- a. Several more high spots need to be corrected in manhole 1-AA. The membrane thickness above the 42° pipe encasement also needs to be reduced to 3/8°. In this small area the furan membrane will have to be thicker to allow for this slight depression. The inside brickwork is to be vertically straight. Fleischer Seeger plans to complete this work on 8/2/85. Assuming acceptance of the asphaltic membrane, work can then begin on the furan membrane. Pin hole testing will continue to be minimized.
- b. Additional grinding is required in a few small areas on the concrete encasement around the 42° VCP in manhole 1-BB. These areas were marked. After grinding, these areas will need to be reprimed. Then the manhole will be ready for application of the asphaltic membrane. Alberici.
- c. Petterson and Nelson need to review all of the other completed manholes ASAP to insure that the walls have good vertical alignment. This will insure that the membranes can be correctly installed.

J.J. Beckerle, et al
August 2, 1985
_ Page 3

5. Department 245

- a. <u>Lichtenheld</u> reviewing the possibility of moving manhole 3-AA farther to the west to avoid the possible necessity to sheet pile in this area due to the proximity to railroad track #4, which needs to be kept open during construction. This will increase the length of the culvert pipe under this track.
- Railroad track #4 also crosses lateral L-85. A precast section of 42° VCP could be installed under this track during the October shutdown. In order to have one fixed point, the concrete work on manhole 2-DD should be complete at this time. Shipley and Martini to work with Alberici in planning this work.

The next progress meeting will be held on Thursday, August 8 at 9:30 a.m. at the construction trailers. All Monsanto project personnel are to meet prior to this meeting at 9:00 a.m.

Gordon A. Grundmann

ga/21782

NGK 4084662

August 1, 1985

Pad to Selin sever flow plan Post to firm up and get agreement on_ Actes for various stages of sonstruction.

D. Anold (Flescher-Lugar)... Dich (Flescher-Lugar)... E Totz (Alberice). W Klester (Alberice).

Concrete Contours connot be followed.

Fill in of indents, etc. cannot be
maintaining the 4" to "10" thick membrace

1) NEED TO RESOLVE thickness applications
problem, and pinholo clocks.

Certification received on ten from Pennest. Resolve alternative on T 2.

2) Lewer Entry Requirements - every loss we Baruwe are going into we never
to make up and document
from new water the end of
the jul Carrercco.

3) Resolut complete glas in stated for T-3 (right now we've guessay) (Logs glavels and Alter for all gardise received).

Monsanto Company Corporate Engineering Department Sauget, Illinois 82201

July 30, 1985

J.S. Alberici Construction Company 2150 Kienlen Avenue St. Louis, Missouri 63121

Attention: Mr. Bill Koester Subject : WGK Sewer Project

I have recently discussed with you our concern of Alberici personnel entering the sewer excavation prior to Monsanto completing test for ... flamable gases and oxygen content. Although the excavation is not considered a vessel and therefore a Vessel Entry Permit is not required, we must recognize that the environment in which you are working could allow toxic or oxygen depleting gases to accumulate in the excavation. Due to the possible existance of these conditions, no personnel are to enter the excavation until testing has been completed and Fire Permits are issued.

In the event that you wish to start work prior to normal start time. please notify Ken Petterson or Ralph Martini so permits can be made available as you need them. Notification of such early starts should be made no later than 3:00 pm the day before the early start is to take place.

This procedure is for the protection and safety of all parties. Please let me know if you have any questions or concerns in complying with this request.

Site Construction Manager

BWS/acg

CC:

Chris Lotz/ Warren Bodine

- L. Bumbicka/D. Nelson
- O. Shipley
- R. Martini
- L. Kreh
- T. Carrico K. Petterson

HGK 4084664

J.S. ALBERICI CONSTRUCTION CO., INC.

July 30, 1985

Monsanto Company Route 3 Sauget, IL 62201

Attention: Mr. Bruce Steketee/C.E.D.

Ref: Monsanto Project 3808

JSA Job #8434

42" Joint Installation

Gentlemen:

On July 24, 1985, at approximately 9:35 a.m., Ken Petterson called and advised us that Monsanto did not wish to make any additional 42" joints until resolution was reached regarding their concerns as to the methods being used to make the joints. In an effort to effectively use the 42" joint crew, we elected to fall back and complete previous joints set on July 22 and July 23, only to be notified by Ken Petterson at 12:35 p.m. that Monsanto would not accept any additional 42" two-pass joints and that any action required to repair expanded joints due to exothermic reaction would be the responsibility of J. S. Alberici. At this point, Monsanto had effectively shut down our 42" joint operations.

The following day, July 25, 1985, we did not proceed with any additional work on the 42" pipe joints. During our weekly construction meeting on this day, Monsanto gave us a letter expressing their concerns with the methods being used to make 42" pipe joints, taking the position that we were not performing in compliance with the project specifications, "Yard Chemical Sewers - Clay Pipe", Sect. 2F-5. We reviewed and addressed the letter point by point and followed up with a written reply. The outcome of the letter review and our comments concerning the same revealed that we were in compliance with the project specifications as noted above, and that we would continue with our current 42" pipe joint procedures with exception of the number of required material passes.

When Monsanto stopped our jointing and second pass procedures, our joint conditions from MH 1-EE to MH 2-AA were as follows:

- 1. We had completed the first ten joints by July 19, 1985.
- 2. We had three pipes buttered and set on July 22, 1985, with second passes completed on July 24, 1985.

HGK 4084665

JUL 9 1 1985

2150 KIENLEN AVENUE ST. LOUIS, MISSOURI 63121 UNITED STATES OF AMERICA



TELEPHONE (314) 261-2611 TELECOPIER (314) 261-4225 TELEX 44-2458



Monsanto Company Mr. Bruce Steketee Page Two

July 30, 1985

- We had buttered and set four pipes on July 23, 1985, which have not been completed.
- 4. We had buttered and set one additional pipe on July 24, 1985, prior to Monsanto's notice to cease making 42" joints. This pipe is also not complete.
- In addition to the above, we had four blasted 42" pipes in the trench and ready for setting.

As a result of Monsanto's untimely shutdown of the 42" joint operations, we had several incomplete joints as shown above exposed to the elements and possible damage.

On July 25, 1985, at approximately 5:15 p.m., it started to rain which did not stop until sometime that evening after some 2" to 3" of measureable rainfall.

The morning of July 26, 1985, we arrived on site to find that we had water in the main trench 31 to 36 inches above the encasement base. The water east of Manhole 2-AA was green and clear, while that west of MH 2-AA to MH 1-EE was black and oily. It appears that the leaking encasement east of MH 2-AA and the existing 24" pipe previously cut off at MH 2-AA intercepted and caused a great deal of contaminated flow to come into the main trench. The black oily material brought in by the flow was deposited on the 42" pipe, contaminating completed joints, pipes ready for jointing and partial joints in their curing stage. Please note that had we been allowed to complete the partial joints, as we had intended on July 24, that those joints would have had at least 24 hours of initial set which may have protected the buttered and partial pass joints from the contamination.

The contamination of incomplete joints caused by the sewer inflow has resulted in the need to perform work above and beyond our G.M.P. contract; Immediately, the need to reblast all the incomplete joints in an effort to remove the black oily material to insure a good clean oil free surface for furan bonding.

Secondly and probably the most costly long range effect of the inflow is that since we are dealing with an experimental joint material and procedure of which we have no real data concerning leakage due to fluid submersion of partially cured joints, that we have no way of knowing whether there is any damage to the joints both complete and incomplete that could result in joint leakage. "

HEK 4084666



Monsanto Company Mr. Bruce Steketee Page Three

July 30, 1985

In conclusion, we will perform the reblasting and clean up of the incomplete joints and pipe not yet set and pass the cost of this additional work on to Monsanto. Also be advised that any leakage of the partially submerged 42" pipe joints from MH 1-EE to MH 2-AA will be repaired at the expense of Monsanto. J. S. Alberici will not be responsible for any joint leakage due to fluid submersion of uncured furan joints, specifically the experimental joint currently being used on this project.

If you have any questions or require any further information, please feel free to call.

Sincerely yours,

J. S. ALBERICI CONST. CO., INC.

Christopher J. Lotz Project Engineer

CJL/ral

... cc: G. Grundmann

O. N. Shipley

W. C. Koester

File.

Bumbicke D. Welson Martiniann/K.Lichtenheid Grundmann/K.Lichtenheid Shipley. Mareini

WEK 4084667

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FROM						
(NAME - LOCATION-PHONE)	Robert	J.	Murphy	(2429)	W.C.K.	Plant

DATE

July 29, 1985

cc. O.N. Shipley

-

MAIN SOUTH TRUNK SEWER PROJECT

L.V. BUNGELKA B.W. STEKETER

REFERENCE

TO

Dick Nelson

It has been brought to our attention that the "Tank and Confined Space Entry Permit" is not being used on that above construction project when the contractor's personnel wish to enter excavations or manholes under construction. We recognize that the formal Confined Space Entry Procedure would be an "overkill" in this situation but, nevertheless, some parts of the procedure must still be followed.

The plant agrees to waive the Tank and Confined Space Entry Permit Procedure for entry by construction personnel into sewer excavations and manholes under construction if at least the following precautions are taken:

- The air in the excavation or manhole under construction must be tested for oxygen and flammability at least daily and <u>before</u> entry by anyone for any purpose.
- 2. Fire Permit procedures must be explicitly followed.
- 3. The Tank and Confined Space Entry Permit Procedure may be instituted at any time by the plant if deemed necessary.
- 4. Other precautions may have to be taken during the course of the job as it progresses.

Robert J. Murphy Superintendent, Health and Safety

RJM/jc

HGK 4084668

N-1120

MONSANTO

:om: Gordon A. Grundmann CS6G Corporate Engineering (6112)

Date: July 29, 1985 cc: F.A. Mayse

- L - funbicla Subj: Water Treatment Costs

16 Milan CEA 3808 Main South Trench Sewer Re:

TO: O.N. Shipley 1740 R.C. Martini 1740

B.W. Steketee K.W. Lichtenheld K.W. Petterson 1740

1740

At our last coordination meeting on July 25, Larry Bumbicka outlined the additional water treatment costs that the Krummrich plant will start to incur next May 1, 1986.

He asked for some ideas on what we can do to minimize the effect of these costs on the plant. Please assemble your ideas so we can discuss this subject in a couple of weeks.

Gordon A. Grundmann

ga/1742C

HEK 4084669

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J.S. ALBERICI CONSTRUCTION CO., INC.

July 26, 1985

Monsanto Company Rt. 3 Sauget, IL 62201

ATTN: Mr. Bruce Steketee

Ref: Monsanto Krummrich So. Main Trunk, Proj. 3808

JSA Project #8434 Response to July 25, 1985 letter

nesponse to ta

Gentlemen:

In response to your letter of July 25, 1985, we offer for your review the following comments.

We have not arbitrarily decided to eliminate the pre-alignment of the 42" pipe, but have changed our method to achieve best fit in lieu of the costly pipe rotation on the pipe jig. Our new method involves the measuring and recording of minimum and maximum dimensions of the bell and spigot inside diameters and the laying lengths of each pipe. These dimensions are evaluated to establish the best bell and spigot position and to orientate each pipe in such a way as to maintain a minimum end gap. Once best fit is determined, each pipe is marked with an arrow which is used as a match mark to indicate the top of each pipe. Each pipe, prior to jointing, is dry set to center the spigot into the bell socket and to establish the best invert and grade possible. This has been and will continue to be a step in our pipe setting procedure.

Once the pipe is pre-aligned and joint materials have been placed, the spigot will be brought home to the mating bell, compressing and squeezing out the joint mortar as required. Any movement of the new pipe after the joint mortar has been squeezed out is unacceptable. Joints realizing movement after the mortar is squeezed out will be backed out and remade as specified.

During warm weather months, as we previously agreed, we will resume multi-pass joint installations as directed by Monsanto. Our observations, however, have shown that multi-pass installations increase both the joint costs and take longer to complete.

HGK 4084670

JUL 25 1985

2150 KIENLEN AVENUE ST. LOUIS, MISSOURI 63121 UNITED STATES OF AMERICA



TELEPHONE (314) 261-2611 TELECOPIER (314) 261-4226 TELEX 44-2436

CONSTRUCTION CO., INC.

July 26, 1985

Monsanto Company Mr. Bruce Steketee Page Two

Please be aware that we are as interested as you are in providing a first class job to Monsanto and that we will continue to investigate and evaluate new methods to decrease joint costs and increase productivity.

Sincerely yours,

J. S. ALBERICI CONST. CO., INC.

Christopher J. Lotz Project Engineer

CJL/ral

. bcc:

<u>∾-</u>=

L. Bumbicka/D. Nelson

O.N. Shipley R.C. Martini

G.Grundmann/K.Lichtenheld

...L. Kreh

HEK 4084671

MONSANTO

Prom:	Gordon A. Grundma	nn CS6G	Corp	orate	Engineering	(4-6112)
Date:	July 26, 1985		cc:	D.R.	Bowers	CS6G
				L.V.	Bumbicka	1740
Subj:	Project Progress	Meetings		R.M.	Calles	CS6G
_				M.A.	Coco	Alberici
Re:	CEA 3808 - Main S	outh Trunk	Sewer	R.J.	Geile	CS6G
				E.R.	Hartman	CS6G
TO:	J.J. Beckerle	Alberici		P.R.	Hoemann	1740
	W. Bodine	Alberici		L.C.	Kreh	F2ED
	T.N. Carrico	1740*			Mayse	CS6G
	W.C. Koester	Alberici*		B.W.	Steketee	1740*
	K.W. Lichtenheld	CS6G*		R.L.	Wiese	CS6G
	C.J. Lotz	Alberici*			•	
	R.L. Nelson	1740*		*Pres	ent at meeting	1
	K.W. Petterson	1740*		**Par	t time	•
	R.C. Martini	1740**				
	O.N. Shipley	1740*				
	R. Schlereth	Fleischer	Seeger**	•		
	R.B. Knoll	Fleischer				

Following are minutes of the meeting held at the CED construction trailers on 7/25/85 at 9:30 a.m.

1. Construction Progress

- a. All the joints on the 42° VCP between the encasement east of manhole 1-DD and manhole 1-EE passed the hydro test. The rebar has been placed and the concrete encasement will be poured on 7/26.
- b. Joints are being made on the 42° VCP currently in the trench between manhole 1-EE up towards manhole 2-AA.
- c. The 15" VCP lateral L-43 between manholes 1-DD and 1-GG passed the hydro with no leaks.
- d. Repairs are complete on laterals L-34 and L-35 and they are ready for testing.
- e. The miters are cut on the lateral L-45 VCP and ready for placement after the base is poured.
- f. The VCP for lateral L-46 is laid in the trench and joints are being made.

J.J. Beckerle, et al July 26, 1985 Page 2

- g. The walls for manhole 2-BB have been poured.
- h. Trench excavation continues between manholes 2-AA and 2-BB.
- i. Since the existing pipe through manhole 2-AA was in poor condition, this pipe will be temporarily flumed.
- j. BI warehouse has been cleaned out. Tear down of the building will begin soon.

2. Contaminated Soil

- a. The plant released the area of possible contamination by the BI building back to the project. It is now okay to excavate and work in this area.
- b. The state is continuing to test the stockpiled material and has asked for further samples.

3. Jumper

- a. Brickwork will be installed on the west manhole on 7/25, thus completing jumper T-1.
- b. The plant will move the tote bins over the jumper T-2 routing. Work on the T-2 jumper will then begin. Need 20 feet clearance each side of jumper.
- Lichtenheld and Shipley to review the T-3 jumper routing by the next meeting.

4. Internal Manhole Work

- a. The Pennwalt representative, Huxsley, visited the site on 7/22 and 7/23 and reviewed the job with Fleischer Seeger personnel and Monsanto personnel. Pennwalt feels at this time that their specification for application of the asphaltic membrane is satisfactory.
- b. The new material from Pennwalt is in St. Louis. This material will be used on manhole 1-BB. Fleischer Seeger will attempt to apply this material at 325°F minimum on the walls. (Needs to be hotter in the bucket approximately 360°F.) Monsanto will be given one day's notice prior to application. Fleischer Seeger has purchased and calibrated a new thermometer.

J.J. Beckerle, et al July 26, 1985 Page 3

Application will be made on the top half of the manway first. Then the bottom half will be covered.

If there are problems in the application, Fleischer Seeger and Pennwalt are to advise Alberici and Monsanto and give us their recommendations.

c. Fleischer Seeger hopes to complete the manhole 1-AA asphaltic membrane on 7/26. If this membrane is approved, the furan membrane will be installed 7/29 and 7/30.

5. Dept. 245

- a. A tunnel (probably similar to ACL) needs to be designed for installation under the tracks at the 245 area. The tunnel needs to be installed during the 10/4 to 10/17 shutdown. Lichtenheld
- b. Exploratory excavations for foundations can take place between 8/1 and 8/22. Shipley

6. VCP

- a. <u>Alberici</u> is now measuring the 42° VCP's for portions of the prealignment. This method saves time by not requiring the use of the jig. The pipes will be marked by <u>Lotz</u> to insure they are installed correctly in the trench.
- b. It was restated that there is to be no movement of the two pieces of VCP (side to side and up and down) after the surfaces coated with furan come in contact. Re: memo of 12/31/84.
- c. Blistering of the joints due to the exothermic reaction in the warm weather must be watched for and avoided as this causes porosity in the joint material. As a result Alberici is to go to the 3 pass system of joint installation immediately.

7. Miscellaneous

a. In anticipation of <u>Shipley's</u> retirement in the future and to maintain continuity on the project, <u>Ralph Martini</u> will replace Ship as construction engineer.

J.J. Beckerle, et al July 26, 1985 Page 4

- b. The rebar design for the cage from manhole 1-D-1 to 1-JJ to be worked up by <u>Lichtenheld</u>.
- c. The ACL shutdown is to be sometime in November. During this time the sewer must be installed from manhole 1-D-1 to 1-JJ.

The next progress meeting will be held on Thursday, August 1, at 9:30 a.m. at the construction trailers. All Monsanto project personnel are to meet prior to this meeting at 9:00 a.m.

Sordon A. Grundmann

ga/21782

HEK 4084675

NAME - FORAT	T. Carrico - WGK, Extension 2095	
STAC	July 30, 1985	L. Bumbicka
U	•	K. Lichtenheld - CS6G
SUBJECT	Status Report on CEA 3808	R. Martini
304320	•	R. Nelson
SEFFRENCE		K. Peterson
2577-54137		O. Sh:pley
TO	. P. Hoemann	B. Steketee

Repairs complete on L-34, and L-35 should retest this week.

Fleischer-Seeger primed 1CC, made sewer box repairs at 2-B-2 and 2-D-2 on G Street and continued to work on asphaltic membrane in 1AA to make it acceptable.

Poured encasement on L-43 and rest of line between 1DD and 1EE which takes us through the culvert at ACL.

Made 13 joints and 5 starts between 1EE and 2AA south of BBZ.

Made 5 joints on L-46 south to 1JJ.

Poured manhole 2BB.

Lots of work done on 24" on the northwest side of 1B, needed so 2AA can be built.

T. Carrico Operations Foreman

skg

HGK 4084676

N 1120

Jote Bin Strang

In let Houth of Pleloni's fine.

Gelocate Down Sing time!

Sitestimate Accordanisates acceptance.

- Black with Talin and Killerum Acclosing

F That.

bcc:

L. Bur bicka/D. Nelson

C.N.Shipley

R.C. Martini

G.Grundmann/K.Lichtenheld 07.Santo

L. Kreh

Monsanto Company Corporate Engineering Department Sauget, Illinois 52201

July 25, 1985

J.S. Alberici Construction Co. 2150 Kienlen Avenue St. Louis, Mo. 63121

Attention: Mr. Bill Koester Subject: WGK Sewer Project

Recent observation of the installation of 42" VCP line between M.H. 1-EE and 2-AA has revealed several areas of concern.

We discussed the pre-alignment of pipe with Chris Lotz and learned he has arbitrarily decided not to meet this requirement of the specification.

All pipe is to be pre-aligned according to the specifications and various correspondence between Alberici and Monsnato. Additionally once pipe surfaces which are mortared come in contact with one another there is to be no movement (side to side & up and down) other than the "straight ahead" movement necessary to complete the joint in accordance with the specifications and past correspondence.

Warm weather installation of joint material has become a problem. The joints are exhibiting a unacceptable growth due to the exothermic reaction in warm weather. Various alternatives to this problem have been discussed in the past.

As immediate remedy we recommend at least going to the "3 pass" system of joint installation. We are open to an evaluation of the alternates which will provide a properly installed joint.

We expect Alberici to conform to the specifications for this project. Any deviation from the specifications requires formal approval of CED Construction Supt. and W.G. Krummrich Plant MR.

Please let me know as soon as possible hou you intend to resolve these concerns.

> Bruce W. Steketee Site Construction Manager

BWS/acq

7/4.515. L'Lundres A Finter A Knoll L'Ouchtenheld B Staleter & Hote B Arater & Stay G Tickers F Forth William cost of groundwater trong. Martin takes wellen ASPHALTIC MENIFICALE 1) new material large today 2) Penrualt not willighto days spec. 3) Flescher-Luger will try new material 5) Ilon try new material on NO I trickin AND markets. New material to be applied between 325°F - 400°F. 325°F m the wall. Contractor to resolve with manufactures. Theseler-Sugar requested cirtified letter from Penwelt meets spices
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dette with Sate of school.
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BECAUSE OF DESIGN DATA.
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WGK 4084680
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CEA 3808 l'Alighy J. Smith J. Schwiel-locking Track 6 CLOSED 9/5/15
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MEK 4084681

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WGK 4084683

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Steven D. Smith

(NAME-LOCATION-PHONE)

July 23, 1985

 Warren Smull William DeFer

Regional User Rates

REFERENCE

TO

Larry Bumbicka

You recently requested the Regional "variable cost" of sewering water during 1986. Unfortunately, this cost is dependent on many unknowns such as the actual flow from East St. Louis, Cahokia, and the start-up timing of the Regional Plant.

My best guess at this time is as follows:

Jan - May 1986:

Monsanto will be paying on a fixed flow estimate.

June 86 - May 87: Additional flow from Monsanto will cost approx.

\$2.00/1,000 gallons.

SS/kbp

NGK 4084684

MONSANTO

From:	Gordon A. Grundma	ann CS6G	Corp	orate	Engineering	(4-6112)
Date:	July 19, 1985		cc:	D.R.	Bowers	CS6G
	-			L.V.	Bumbicka	1740
Subj:	Project Progress	Meetings		R.M.	Calles	CS6G
-				M.A.	Coco	Alberici
Re:	CEA 3808 - Main 5	South Trunk	Sewer	R.J.	Geile	CS6G
				E.R.	Hartman	CS6G
TO:	J.J. Beckerle	Alberici		P.R.	Hoemann	1740
	W. Bodine	Alberici		L.C.	Kreh	F2ED
	T.N. Carrico	1740*		F.A.	Mayse	CS6G
	W.C. Koester	Alberici*		B.W.	Steketee	1740**
	K.W. Lichtenheld	CS6G*		R.L.	Wiese	CS6G
	C.J. Lotz	Alberici*				
	R.L. Nelson	1740*		*Pres	ent at meeting	ī
	K.W. Petterson	1740*		**Par	t time	
	O.N. Shipley	1740*				
	R. Schlereth	Fleischer	Seeger**	•		
	R.B. Knoll	Fleischer	Seeger**	•		

Following are minutes of the meeting held at the CED construction trailers on 7/18/85 at 9:30 a.m.

1. Construction Progress

- a. Internal surfaces of manhole 1-CC approved for lining work.
- b. Lateral L-43 to manhole 1-GG ready for testing.
- c. Joints made on 42" VCP to manhole 1-EE. Work begun on the joints on 7 pieces of 42" VCP east of manhole 1-EE.
- d. Manhole 2-BB base poured.
- e. Encasement on existing pipe going through manhole 2-AA is being chipped. It appears there are cracks in the pipe plus a number of joints that are located in the center of the trench which are hard to support. It may be necessary to flume this pipe.
- f. 12" and 15" VCP pipe received for laterals L-35 and L-46.
- g. The Y has been received so that lateral L-34 can be completed.
- h. Kelly has removed the track so that the lateral L-64 trench can be excavated. Approval has been given to dig this lateral.

J.J. Beckerle, et al July 19, 1985 Page 2

- Exploration work to begin at building 245 for underground obstructions.
- j. The 42° trench excavation is at a standstill. The possibility of excavating between manholes 2-BB and 2-CC is being reviewed. Shipley, Alberici, Nelson. Need to have way to keep road open at 2-CC until the road at 1-EE is open.

2 Contaminated Soil

No change in status. Still waiting for results on the possible contaminated soil at BI and permits from the state to haul stockpiled dirt

3. Jumpers

- a. Furalac concrete is not acceptable on the inside of the manholes joining jumper T-1. Acid brick is to be used with a minimum of half a brick.
- b. Work to begin on jumper T-2. There is no conflict with the railroad track.
- c. Alberici to furnish cost for new manhole cover with furan lining for manhole 2-B-2.

4. Internal Manhole Membranes

- R. Knoll and R. Schlereth of Fleischer-Seeger attended the meeting. A summary of the conclusions follows:
 - a. Work has been stopped on the asphaltic membranes until Pennwalt personnel come to the site to resolve some questions. Huxsley may come, but Monsanto feels we must have input from Sheppard who has been associated with this project for months. Huxsley expected Monday or Tuesday, 7/22 or 7/23. A meeting will be held at that time.
 - b. New material has been ordered from Pennwalt and should arrive next week. There is a question as to the new vs. the old Pennwalt materials and the application techniques particularly the temperature.
 - c. Application temperature of asphaltic membrane still needs to be resolved.

MCK 4084686

J.J. Beckerle, et al July 19, 1985 Page 3

- d. The material in manhole 1-AA meets the specification.
- e. Rework has occurred on manhole 1-AA to get thickness per our specs. Most areas are 1/4" minimum to 3/8". A few small areas may be 7/16". Knoll advised the higher thicknesses could be due to the curvature of the concrete walls of the manhole.

5. Miscellaneous

- a. A layout of lateral L-45 was given to Alberici. By adding several joints to the pipe, the curvature is such that a cleanout bucket can be pulled through.
- b. Unloading operations at ACL are back to normal on the west side track and rail operations.
- c. <u>Lichtenheld</u> resolved the overlap of encasements at manhole 2-CC and gave <u>Alberici</u> information.

The next progress meeting will be held on Thursday, July 25 at 9:30 a.m. at the construction trailers. All Monsanto project personnel are to meet prior to this meeting at 9:00 a.m.

ordon A. Grundmann

ga/2178Z

780H	_			
(MAME-LOCATION-PHONE)	T.	Carrico,	Ext.	2095

MTE

July 23, 1985

cc L. Bumbicka

TOBLEUS

Status Report on CEA 3808

R. Nelson

BAFERENCE

K. Petterson

K. Lichtenheld - CS6G

: :

O. ShipleyB. Steketee

TO

P. Hoemann

Repairs started on L-35 stopped.

Manhole ICC acepted internally.

Joint on L-43 made between 1DD and 1GG.

Joints completed between 1DD and 1EE with a successfully hydrotest Friday.

Making joints between 1EE and 2AA.

Base poured for 2BB and manhole forming started.

Tracks removed and excavation started for L-64 to 2B-1.

Caustic and $\rm H_2SO_4$ unloading restored to original condition. Temporary caustic facilities left in place as requested by Department 251.

T. Carrico

Operation Foreman

skg

HGK 4084688

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MONSANTO

From:	Gordon A. Grundma	nn CS6G	Corpora	te Engineering	(4-6112)
Date:	July 15, 1985		cc: D.F	. Bowers	CS6G
	• •		L.V	. Bumbicka	1740**
Subj:	Project Progress	Meetinas	R.M	. Calles	CS6G
•			M.A	. Coco	Alberici
Re:	CEA 3808 - Main S	outh Trunk	Sewer R.J	. Geile	CS6G
		•	E.R	. Hartman	CS6G
TO:	J.J. Beckerle	Alberici	P.R	. Hoemann	1740
	W. Bodine	Alberici	L.C	. Kreh	F2ED
	T.N. Carrico	1740*	F.A	. Mayse	CS6G
	W.C. Koester	Alberici*	B.W	. Steketee	1740
	K.W. Lichtenheld	CS6G*	R.L	. Wiese	CS6G
	C.J. Lotz	Alberici*			
	R.L. Nelson	1740*	*Pr	esent at meeting	3
	K.W. Petterson	1740*	**p	art time	
	O.N. Shipley	1740*	•		
	R. Schlereth	Fleischer	Seeger**		

Following are minutes of the meeting held at the CED construction trailers on 07/15/85 at 9:30 a.m.

1. Construction Progress

- a. Manhole 1-DD passed the water test. The coal tar epoxy has been applied to the outside.
- b. The internal surfaces of manholes 1-CC, 1-DD and 1-EE are being prepared for inspection and coating. Epoxy brick mortar is being added to manhole 1-EE.
- c. Lateral L-34 to manhole 1-BB is complete except for replacement of a "Y" which leaked. Lateral L-35 to manhole 1-BB has several joints yet to complete. Both laterals are installed into the manholes.
- d. Both laterals to manhole 1-CC are installed and concrete encased.
- e. A flume has been temporarily installed through manhole 1-CC for handling building BBW sewer waste.
- f. Backfill has been completed over the main 42° VCP line to just west of manhole 1-DD.

WEK 4084690

J.J. Beckerle, et al
Page 2
July 15, 1985

g. The 42° base slab has been poured from manhole 1-EE almost to manhole 2-AA.

The base slab from manhole 1-GG to 1-DD (lateral L-43) has been poured.

- h. The trench for lateral L-46 from manhole 1-EE to 1-JJ is being prepared for pouring of the base slab for the 15° VCP.
- i. Manhole 2-AA base poured today.
- j. 42" VCP has been laid in the trench from manhole 1-DD to 1-EE and for approximately 100' past 1-EE.
- k. Started making 42" VCP joints through culvert pipe towards manhole 1-EE.
- 1. Fleischer Seeger has started installation of the asphaltic membrane inside manhole 1-AA.
- m. Kelly will remove the track stops that will allow the rail-road tracks west of ACL to be reopened.
- n. Lateral L-45 (north of manhole 1-EE) is still in review.

 Layout drawings have been made by Alberici for Lichtenheld and Nelson to review. The primary concern is to revise the line so that a cleanout bucket can be pulled through the line.

2. Contaminated Soil

- a. Additional tests are in progress on the possible contaminated soil by the old BI building. Results expected in 1 to 2 weeks.
- b. The state permits to allow removal of some of the excavated dirt piles are not due until around August 1.

3. Jumpers

- a. T-l jumper complete except for the work to be done inside the manholes. Furulac concrete is being considered.

 <u>Lichtenheld</u> and <u>Nelson</u>.
- b. A list of the required clothing to enter these manholes to be given to <u>Alberici</u> today.

J.J. Beckerle, et al Page 3 July 15, 1985

- c. The existing pipe from manhole 2-B-1 to box 2-B is leaking. This line needs to be temporarily repaired to allow the use of jumper T-1. A T.V. camera may be sent through the line to locate the leak.
- d. A top is needed for manhole 2-B-2. Shipley.

5. Internal Manhole Membranes

- a. Fleischer-Seeger requested a revised method of putting on the asphaltic membrane. They requested:
 - 1) Heat the material to approximately 290°F instead of 325°F to 400°F. They say that the material runs too much at the higher temperatures.
 - 2) That a 3 part installation procedure be allowed, i.e., the bottom 6' or 7', the top 6' or 7', and finally the bond in between. <u>Lichtenheld</u> and <u>Nelson</u> to review and advise.
- b. Ideally the membrane thickness should be 1/4". Prefer to control to no more than 5/16". 3/8" thickness in some places would be acceptable in some instances, but better control than this is expected most of the time.
- c. Two pieces of cloth are not to be applied. Only one piece of cloth is required.

6. Miscellaneous

- a. <u>Alberici</u> to begin excavation of lateral L-64 if okayed by Nelson. Digging of the main trench east of manhole 2-BB could be resumed if access to the BI warehouse could be opened on the east end. Shipley.
- b. The BI warehouse should be cleaned out by July 19.
- c. <u>Shipley</u> and <u>Nelson</u> to meet with the manufacturing personnel in department 245 on 7/12/85 to discuss the construction activities planned in this area.
- d. Lichtenheld to finalize manhole 2-FF layout the week of 7/15/85.

J.J. Beckerle, et al Page 4 July 15, 1985

e. Throttling of the dewatering pumps discharge flow needs to be adjusted to minimize the ground water being pumped to the treatment plant, while still maintaining the ground water levels at the proper depth. This control will become more critical in January and May of 1986 when the new regional treatment plant comes on stream due to the increased cost of processing the water. Shipley.

The next progress meeting will be held on Thursday, July 18, at 9:30 a.m. at the construction trailers. All Monsanto project personnel are to meet prior to this meeting at 9:00 a.m.

Gordon A. Grundmann

ga/21782

	NAME-LOCATION-PHONE: T. Carrico, Ext. 2095					
DATE		July 15, 1985	cc. L. Bumbicka -			
		•	K. Lichtenheld - CS6G			
TORLEUS		Status Report on CEA 3808	R. Nelson			
		•	K. Petterson			
REFERENCE	;		O. Shipley			
			B. Steketee			
то	:	P. Hoemann				

Repair began on L-35 lateral.

Manhole 1BB primed-transite building in place.

Manhole 1CC is still not acceptable for prime coat.

1DD okayed on water test and epoxy coating applied - some backfill.

L-43 base poured and tile in place.

L-46 and 2AA bases poured.

Started making joints again between 1DD and 1EE on July 10.

Tracks 8B and 8D back in service on July 12.

T. Carrico Operation Foreman

skg

WGK 4084694

7/15/95

South Truck Soun 3808

R. Nelson J. Shundinan J. Mc Overny F. Suttonkelor J. Mayor B. Stillette

Defin sectio craste treatment cost for ground water Jungsel.

2/13/05

South Trumb Shows 38:8	
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Degativis (Vulnerabilities) Entamination bil * Estander Schedul	
* One Survey relates to the other.	
Franks 1985.	
WGK 4084696	

FROM (NAME-LOCATION-PHONE) T. Ca. .co, Ext. 2095

DATE

July 11, 1985

Status Report on CEA 3808

cc. L. Bumbicka

K. Lichtenheld - CS6G

R. Nelson

K. Petterson

O. ShipleyB. Steketee

REFERENCE

TO

P. Hoemann

No change in L34 and L35.

Asphalt membrane around 70% complete on IAA manhole.

Manhold 1BB has been primed inside and curing.

Concrete base for 42" sewer is complete through 1EE to within 30 foot of 2AA manhole.

Jumper #1 is complete except for inside acid brick repairs in 2-B-2 and 2-D-2.

Laterals into ICC are encase and sewer from BBW is flumed through to existing sewer system.

T. Carrico

Operation Foremen

skg

WGK 4084697

FROM
INAME-LOCATION-PHONE: J. Scheibal-Colling

DATE

July 8, 1985

cc. J. McQueeny

TOBLEUR

Contingency Plans Of Sewer

J. Boehm E. Billen

Job Through Department 245

B. Steketee

REFERENCE

TO

: -R: Nelson

L. Bumbicka

C. O'Neal

O. Shipley-

RESCHEDULED MEETING

I would like your attendance at a meeting to discuss our plans for keeping P_2S_5 running in an efficient manner during work on the sewer job in the area. Please come prepared with schedules, plot plans, suggestions, cost estimates, etc. The major items I expect to cover are:

1. Tote bin storage areas.

2. Dirt storage areas.

3. Fork truck access to tote lot.

4. Warehouse access for shipping

5. Raw material (especially P_A) availability.

The meeting has been rescheduled for \$2.30 R.M. Friday, July 12, 1985, in Conference Room #2.

J. Scheibal-Colling

SMS

WGK 4084698

FROM	_					1005
(NAME-LOCATION-PHONE)	Τ.	Carrico	-	WGK	•	2095
			_			

July 5, 1985

cc. L. Bumbicks

K. Lichtenbeld - CS6G

Status Report on CEA 3808 SUBJECT

R. Nelson K. Petterson

-

O. Shipley B. Steketee

P. Hoemann TO

Water table back in control by Wednesday morning, 6/26.

Both laterals L-34 and L-35 completed and tested. One leak on L-34 and three on L-35. Rest of lines encased.

Manhole 1-AA finally accepted for brickwork. Fleischer-Seeger to start today, 7/1.

Manhole 1-JJ formed and poured.

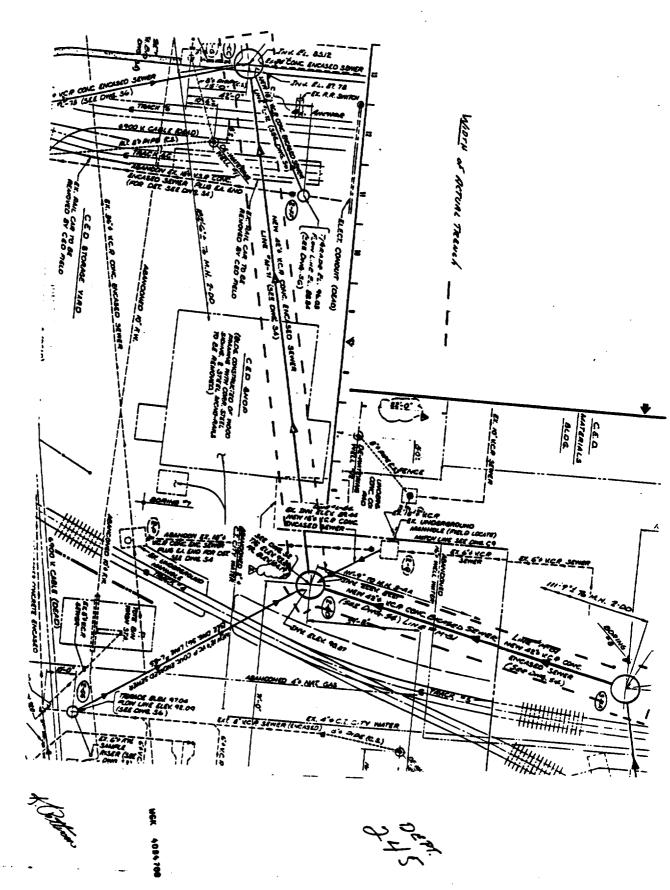
Work started on Jumper #1 but not completed last week. All but sewer box work will be completed by 7/2.

Work started on laterals into 1-CC.

Excavation started at 2-BB after work was stopped east of 2-AA.

Tom Carrico Operation Foremen

/bb



EPA/CEPRO COPPER/EIL/PCB ATTORNEY WORK PRODUCT / ATTORNEY CLIENT PRIVILEGE

J.S. ALBERICI CONSTRUCTION CO., INC.

July 1, 1985

cc: K w Liettenhell

B. Held

CS6G Monsanto 800 North Lindbergh Blvd. St. Louis, Mo. 63167

Re: Monsanto CEA 3808

Additional Labor Cost for Revised
Acid Proof Pipe Joint Material
Main South Trunk Sever

Attention: Mr. Gordon Grundmenn

Gentlemen:

•

We have been requested to submit our additional construction labor cost for the installation of the $42^{\rm H}$ V.C. pipe revised joint material on the Main South Trunk Sewer Project at the W. G. Krummrich Plant.

In the past eight months we have experienced many conditions that have affected our construction costs in the installation of the revised pipe joint material for the 42" V.C. pipe sewer. Our opinion is that the following conditions or procedures have increased our construction costs for the installation of the revised pipe joint material:

- 1. The revised pipe joint material is a new material. It was developed by Monsanto and Pennwalt Companies. The plans and specifications do not provide information on the characteristics of the material and there are no field performance test results available for this product. Pennwalt and Monsanto's engineering and plant personnel have instructed, trained, and observed the field installation of the revised pipe joint materials. JSA has not installed any pipe joint material without the constant supervision and inspection of Monsanto's C.E.D. JSA has requested suggestions to improve the construction methods from both Pennwalt and Monsanto and has complied with all of their directives.
- 2. When JSA submitted its proposal, all of the conditions or procedures that would be required to install a newly developed pipe joint material could not be anticipated. The construction and curing procedures for this revised product have been revised or clarified several times since the project started.
- 3. The revised pipe joint material has a percentage of shrinkage. This may be causing additional leaking in the pipe joints. Mo field test



MSK 4084701

2150 KIENLEN AVENUE ST. LOUIS, MISSOURI 63121 UNITED STATES OF AMERICA

CABLE ADDRESS: ALBERICI ST. LOUIS, MISSOURI

TELEPHONE (314) 281-2811
TELECOPIER (314) 281-4225
TELEX 44-2438

Moneanto
July 1, 1985
Page 2

data are available for this specific application of the pipe joint material to the largest diameter of V.C. pipe manufactured. JSA is experiencing a greater percentage of leaking in joints than could be reasonably anticipated.

- 4. Pipe joints were exposed to surface water while in their curing period, the result of unseasonably heavy rains combined with failure of the dewstering system to operate, and failure of existing sever plugs.
- 5. The curing period was disrupted and the pipe joints emposed to low cold weather temperatures because of the safety conditions required by Monsanto during the unloading of benzene.

After a detailed analysis of our construction procedures and review of our construction costs, we have concluded that our construction costs to install the revised pipe joint material have increased two hundred and twenty-one dollars (\$221.00) per pipe joint.

180 42" pipe joints on project @ \$221.00 ea. = \$39,780.00

We have completed thirty-eight (38) 42" V.C. pipe joints. Twelve (12) of these leaked. Repair of leaking pipe joints is thirty-two percent greater than we anticipated and estimated for the project. If present conditions continue, we project that there will be fifty-seven (57) leaking joints on the project. Our construction costs will increase.

57 pipe joints @ \$841.00 ea. = \$47,937.00

The additional cost to retest the sewer lines for the repair of the leaking pipe joints will be increased by eleven (II) tests.

11 tests @ \$516.00 ea. = \$5,676.00

Repair of leaking pipe joints requires additional bulkheads and additional smaller concrete pours for the concrete encasements. This has increased our concrete form and placement cost.

- 11 bulkheads @ \$742.00 ea. = \$8,162.00
- 11 concrete pours @ \$249.00 ea. = \$2,739.00

Additional leaks in pipe joints also delay the backfilling of the sewer trench thus extending the exposure to rain and flooding of the trench resulting in additional cost for clean up. To date our construction clean up costs are, \$23,076.00. If we are experiencing a thirty-two percent increase in repair of



Monsanto July 1, 1985 Page 3

leaking pipe joints, then thirty-two percent of the clean up cost would be associated with pipe joint repair.

32% of \$23,076.00 = \$7,3~4.00

The recap of our additional construction costs for installation of the revised pipe joint material for the 42" sewer is as follows:

1. Additional cost to install the 42" pipe joint material

180 ea. @ \$221.00 = \$39,780.00

2. Additional cost to repair leaking 42" pipe joints

57 ea. @ \$841.00 = \$47,937.00

3. Additional cost to retest repaired leaking pipe joints

11 tests @ \$516.00 ea. = \$5,676.00

4. Additional cost for bulkheads and smaller concrete pours

11 bulkheads @ \$742.00 ea. = \$8,162.00

11 concrete pours @ \$249.00 ea. = \$2,739.00

5. Additional cost for clean up

32% of \$23,076.00 = \$7,384.00

We request that after you complete your review of our additional costs, we have the opportunity to review and discuss with you an equitable adjustment to our contract for the additional costs that we are and will be incurring with the installation, cure, repair of leaks, and retesting of joints in the construction of this project.

We are at present preparing for your consideration a statement of the operational plant delays which are extending the completion of this project.

If there are questions or additional information is desired, please advise.

Very truly yours,

W. C. Koester

Group Vice President

WCK/bk